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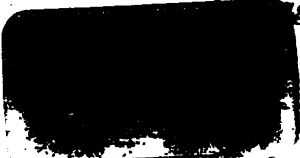
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OFFERED BY TWENTY-FOUR COLLEGES AND UNIVERSITIES OF
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PROCEEDINGS OF THE
ANNUAL CONVENTION
OF GRADUATE CLUBS

SIXTH ANNUAL EDITION

PUBLICATION AUTHORIZED BY THE FEDERATION OF GRADUATE CLUBS

GEORGE WYLLYS BENEDICT, Harvard, EDITOR-IN-CHIEF
FREDERICK A. CLEVELAND, University of Chicago, MANAGER

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PREFACE.

WITH a few slight changes, this edition of the HANDBOOK OF GRADUATE COURSES follows the plan of that of last year. This is in accordance, not only with the wishes of the Federation of Graduate Clubs, which, at the Chicago convention in December, 1897, recommended a conservative policy for the HANDBOOK, its authorized publication, but also with the opinion of those who have found the HANDBOOK useful in its present form. The only material departure from the plan of previous editions is in the printing of the address read by Professor Tufts before the Chicago convention, included by vote of the convention. The HANDBOOK for 1898-99 comprises an abstract of the proceedings of the last convention of the Federation ; the address just mentioned ; a list of those who received doctor's degrees in 1897, with the titles of their theses ; the officers of the Graduate Clubs of the twenty-four institutions represented ; short accounts of these institutions, with a table for ready comparison of the graduate work done by them ; and a detailed list of the courses offered for 1898-99, with an index that serves as a directory of instructors.

The publication of the HANDBOOK has been of necessity somewhat delayed beyond the date set for its appearance. This has been due to the fact that in some cases the announcements of courses for next year were not made at the expected time. In the case of Columbia University and Barnard College, the announcements are practically those of last year, but changes, improvements, and additions have been made which can be found in the official announcements of those institutions. In general, the HANDBOOK must serve rather as an indication of the grade of work done by an institution than as a complete guide to courses, though the effort has been made to give courses as completely as possible. It is expected that students will naturally supply themselves with the official bulletins and announcements of the universities where they purpose to study, and will use the HANDBOOK as a basis of comparison.

In order to make such a comparison *more* trustworthy, it should be noted that in the statement of Chicago *the* number of students in attendance during the summer quarter, as well *as* the summer courses, are separately stated.

The new arrangement by which the duties *of* editor and manager are given, to different persons, we believe *has* been, on the whole, more satisfactory than the previous system.

MAY 26, 1898.

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THE FEDERATION OF GRADUATE CLUBS.

PROCEEDINGS OF THE ANNUAL CONVENTION HELD AT THE UNIVERSITY OF CHICAGO, DECEMBER 30-31, 1897.

At the Baltimore Convention in 1896 the Chicago Club extended to the Federation an invitation to hold its next annual meeting at the University of Chicago. The invitation was accepted, and brought out a larger meeting than any previously held, though one less institution was represented than in the Baltimore Convention. Twenty-nine delegates were present, from Barnard, Brown, Chicago, Columbia, Columbian, Cornell, Harvard, Michigan, Missouri, Northwestern, Pennsylvania, Radcliffe, Stanford, Vanderbilt, Wellesley, Western Reserve, Wisconsin, and Yale. Tulane was represented by proxy. Fifteen of these institutions had delegates in the Baltimore Convention; Columbian, Stanford, Vanderbilt, and Tulane were represented for the first time; and Bryn Mawr, Clark, Johns Hopkins, and New York sent delegates to Baltimore, but none to Chicago. The presence at Chicago of five delegates to the Baltimore Convention indicates a continuance of interest in the Federation on the part of the individual students. The facts that six western universities sent delegates to Baltimore, and at Chicago there were delegates from ten eastern and two southern institutions, and that delegates came from points as far remote as Harvard, Vanderbilt, and Stanford, are evidence that the Federation of Graduate Clubs is an organization of more than local interest.

The Convention held its meetings at Haskell Hall, the University of Chicago. At the opening of the first session it was welcomed by President Harper in a brief address treating of the growth and ideals of graduate work. Professor J. H. Tufts, of the University of Chicago, addressed the second session on the subject of "The Relation of Phi-

losophy to other Graduate Studies." The full text of this address will be found following this abstract of the proceedings of the Convention.

REPORT OF THE EXECUTIVE COMMITTEE.

The report of the Executive Committee, read by President J. D. Forrest, of the University of Chicago, embraced: (1) a survey of graduate study in America; (2) a definition of graduate work; and (3) recommendations of a conservative policy with reference to applications for membership in the Federation and admission to the *Handbook*, and of the discussion of problems common to all graduate work in club meetings, in order to bring the clubs into more vital relations with the Federation.

In stating the progress of graduate work, note was made of the difficulty of comparing figures in the *Handbook* from one year to another because of different points of view taken in making the returns. For example, the tabular statement for 1895-96 shows 3,204 graduate students, and by departments the number is 4,380; while for 1896-97 the number in the tabular statement is 2,905, and 4,904 by departments. This decrease in the one case and increase in the other is no doubt due to lack of uniformity in making returns. The distribution of students among the various groups of departments of the twenty-three universities was as follows:

	Students, 1895-96	Per cent.	Students, 1896-97	Per cent.
I. Language and Literature	1,152	35.4	1,720	35.0
II. Historical and Social Sciences	902	20.6	1,168	23.8
III. Philosophy, Ethics, Psychology, and Pedagogy	817	18.6	904	18.4
IV. Biology, Chemistry, and Geology	672	14.2	652	13.3
V. Mathematics, Physics, and Astronomy	487	11.1	460	9.7
Total	4,380	100	4,904	100

This comparative table shows the proportion of students in the historical and social sciences to have increased, while all the others have slightly decreased, this being most marked in Group V. The total

number of instructors offering graduate courses was 1,192; the number of Doctor's degrees conferred was 184. None were conferred *honoris causa* by institutions represented in the *Handbook*.

The report included an interesting table concerning nine leading universities in the Federation :

	Instructors ¹	Grad. students	Drs. degrees 1896-7
Bryn Mawr.....	28	46	2
Chicago	120	514 ²	20
Clark.....	10	47	5
Columbia and Barnard.....	99	237	10
Cornell	67	147	17
Harvard and Radcliffe.....	109	334	18
Johns Hopkins.....	51	206	36
Pennsylvania	49	161	18
Yale	94	227	31
Total.....	627	1,919	157

From these tables it is seen that in these institutions there was about one instructor for three students, though of course many of them devote only a small portion of their time to graduate instruction; about one in twelve of the graduate students received degrees.

Emphasis was laid on the ideals of graduate work as accepted by the Federation. "Since the Federation of Graduate Clubs stands for the encouragement of graduate work in America, it is but proper that the efforts being put forth by several other institutions—notably, Brown, California, Michigan, New York, Stanford, Vanderbilt, and Wisconsin—should be recognized. We must also recognize that there are in many of the smaller colleges professors who are well qualified to give graduate instruction in our leading universities, and who by personal direction of the students' work may lead them in as profitable a graduate course as could be pursued in the largest universities. Nevertheless, none of this can be called graduate work in the sense in which the term has been accepted by the Federation. While a greater

¹ Based on actual count of number whose courses are listed in *Handbook*; not on tabular statement.

² Not including enrollment for summer quarter.

interest may be aroused in higher education by simply prolonging college work, the latter remains but college work, and the university which calls it graduate work may keep those who come under its influence from taking advantage of far greater opportunities elsewhere. The private work, under the personal direction of a single instructor, is quite likely to lack the breadth which is characteristic of work in a well-equipped graduate school. Graduate work, according to the common opinion of the delegates at the Baltimore Convention, consists (1) of a thorough introduction to the literature and methods of a given discipline, for which the A.M. degree is supposed to stand; (2) of a considerable degree of original research, some of the results of which are (3) embodied in a dissertation which is a contribution to knowledge. And this work, it is thought, should be of such a uniformly high grade that the student can migrate from one university to another in order to study under the best men, wherever found, without losing due academic recognition for the work he has done.

"If this is the graduate work which the Federation seeks to encourage, it is manifestly impossible to extend the membership of our association much beyond its present range. Indeed, it may be questioned whether there are not some clubs included in the Federation whose universities can scarcely be considered as equipped for graduate work. Every fairly well equipped college which allows any range of electives whatever can offer its graduates opportunity for at least one year's profitable study; but this must be in junior and senior courses which were not elected during the undergraduate period. All over the country there are little groups of such graduate students, and many of them have formed graduate clubs.

"It has been our policy, during the past year, to leave these associations to attend to their purely local functions, and in no case to encourage them to seek membership in the Federation. We hold that unless there are other than purely local reasons for students pursuing graduate study in a given institution, that institution can hardly have been confronted with the problems of graduate work which are the chief concern of the conventions of the Federation, nor have attained to such a position that graduate students be encouraged to migrate to it for a

part of their graduate courses. We therefore recommend to the Federation a conservative policy with reference to applications for membership. Under the circumstances above mentioned, the inclusion of courses in the *Handbook* would encumber the latter without benefiting the institutions, whose graduate patronage must remain largely local, unless, indeed, it would enable them, by pointing to the fact that their courses were put side by side with those of the great universities, to restrain students in their localities from seeking the greater advantages which are easily to be secured elsewhere. We therefore also commend to the Federation that portion of the report of the Editor of the *Handbook* in which a conservative policy is urged."

THE HANDBOOK.

The report of the Editor-in-Chief of the *Handbook* was read by Mr. Strong of Yale, the Editor, Dr. C. A. Duniway, not being present. The discussion which followed the reading of the report was one of the most animated of the meeting. Delegates had come with definite personal opinions in regard to the conduct of the *Handbook*, and with definite instructions from their respective clubs. A strong feeling that the *Handbook* is too expensive for the place it fills was developed. It was shown that the circulation is very small, pointing to a limited demand for it. One plan offered to reduce expenses was that of publishing for four successive years a supplement, instead of a complete handbook, the fifth year making a complete revision. One delegate moved that the publication of the *Handbook* be entirely discontinued.

The general opinion of the Convention was, however, that the *Handbook* is too useful to be discontinued, but that some change should be made in its financial management. In view of this, a committee was appointed to report recommendations for the future conduct of the publication. The Committee reported seven recommendations, one of which provided for the election of a Business Manager to relieve the Editor-in-Chief from the publication and sale of the *Handbook*. Another recommended the election of Mr. G. W. Benedict, of Harvard, as Editor-in-Chief, and Mr. F. A. Cleveland, of Chicago, as Business

Manager. Mr. Gray, of Missouri, offered an amendment to the recommendations of the Committee as follows:

1. That all applications for admission to the *Handbook of Graduate Courses* be referred to a separate committee of five members appointed for that purpose.
2. That all applications, accompanied by catalogues, circulars, and other information, shall be in the hands of the committee at least three months before the annual meeting at which final action is taken.
3. That the Committee shall report on applications for admission to the *Handbook* to the meeting of the Federation, which shall cast the final vote on the question of admission. A vote of a two-thirds' majority of all delegates present shall be necessary for election.

The recommendations as amended were adopted, and a Committee on Admission to the *Handbook* appointed, consisting of Mr. W. M. Strong, of Yale; Miss Mabel Hurd, of Barnard; Mr. D. H. Bishop, of Vanderbilt; Mr. E. H. Comstock, of Cornell; and Mr. F. H. Gazzolo, of Harvard. A standing committee was also provided to report on future publication of the *Handbook*, to which shall be referred all recommendations as to changes in the publication. This committee is to consist of one member each from Harvard, Columbia, Pennsylvania, Chicago, Wisconsin, Yale, and Cornell, appointed by the local clubs in each case.

MIGRATION.

The report of the Committee on Migration, prepared by Mr. MacCracken, of the University of New York City, was read by Mr. W. A. Schaper, of Columbia. The Committee took for its special object the investigation of the attitude of American universities toward migration, and how far migration is discouraged by arbitrary restrictions. The inquiry extended over twelve prominent universities only. The result showed that the only fixed rule limiting migration is the requirement of one year's resident study at the institution granting the degree. This provision seems both wise and necessary. By granting a degree to a student a university accepts a responsibility; it lends the endorsement of its name to his scholarship. A sufficient period is necessary for professors to become acquainted with a candidate for a degree. The advantages to a student of a year's continuous work are obvious.

The report further pointed out the dangers of too much migration, resulting in broken semesters or units of study-periods. It concluded by showing that, owing to lack of a uniform method of computing credits, students migrating from one university to another are frequently penalized because of migration. This fact alone is a hindrance to migration, just as the want of a stable measure of value is a hindrance to exchange in the commercial world. Suggestion was made that a standing Committee on Migration be authorized to seek, in the name of the Federation, such action from university faculties as may be necessary to provide for a definite indication in the *Handbook* of the courses which each university will consider as an equivalent of its own courses, and further to state how many courses at a particular university will be credited as a full year's work.

A committee was appointed to report on the same subject at the next Convention, consisting of Mr. E. D. Holmes, Western Reserve; Miss Pillsbury, Radcliffe, and Mr. E. R. Buckley, Wisconsin.

PRINTING OF THESES.

This report was prepared by Mr. C. M. L. Sites, of Columbia. In fifteen of the institutions represented in the *Handbook* the printing of the doctorate thesis is required, with varying time limits; others may require it in special cases. The discussion of the report, which was brief, showed that opinion is not unanimous as to the feasibility of always requiring the printing of the thesis, though the tendency seems to be toward that requirement. It was resolved by the Convention, *That the Federation of Graduate Clubs recommend that universities granting the Ph.D. degree should undertake the expense of printing the doctorate thesis.*

FELLOWSHIPS.

A paper on Fellowships was read by Mrs. Comstock, of Cornell, and discussion opened by Mr. Strong, of Yale. It was *resolved, That it is the sense of the body that fellowships should be granted only as a mark of distinction; that we approve the establishment of fellowships for research work for those that have already received the degree of Ph.D.*

MAJOR AND MINOR SUBJECTS.

Mr. Burchard, of Chicago, led the discussion on this question. There was a consensus of opinion that majors and minors should be very closely related, with a view to increasing professional knowledge, rather than gaining breadth. It was shown that the practice of some leading universities is to make the minors so integrally a part of the majors as to practically abolish the distinction. A committee was appointed further to investigate practices in this regard, consisting of Mr. W. A. Shaper, Columbia; Mr. H. E. Bolton, Pennsylvania, and Mr. E. R. Sunderland, Michigan.

THE GRADUATE CLUB.

The discussion of the Graduate Club was led by Mr. Neilson, of Harvard, who outlined the organization and aims of the Harvard Club, and discussed topics of general club interest. Other delegates described the experiences of their respective clubs. The interchange of local experiences no doubt will prove valuable as furnishing many suggestions for the management of individual clubs. It was clearly shown that all clubs cannot follow the same ideals, or have the same kind of meetings and programmes, owing to local circumstances. Thus the Barnard Club finds it wise to make the graduate club largely literary and scientific in character, because the demands for social advantages are met in other ways. But others find graduate students best brought and held together by making the club largely social in its nature. This is especially true where departmental clubs prevail, supplying the scientific demands of students better than the general club can supply them. Pennsylvania club life presents some unique features. For some time women were not admitted to the club meetings, which were in the form of "smoke-talks." Now women are admitted to the club, but two kinds of meetings are held, each monthly, two weeks apart. One is a general meeting, where the regular club business is transacted, general topics of interest discussed, and light refreshments served; the other meeting is less formal, consisting of a "smoker," to which women are not invited. The most usual experience seems to point to the expediency of making the general graduate club largely social in its nature, mak-

ing discussions informal, and of non-technical character. President Forrest urged on the clubs the advisability of considering in local programmes such subjects as come before the annual Convention.

THE CONSTITUTION.

A committee of five was appointed to draft a new constitution to be presented to each club three months before the next Convention. The committee consists of Mr. E. H. Comstock, Cornell; Mr. H. E. Bolton, Pennsylvania; Miss Elizabeth Faulkner, Chicago; Mr. George A. Ross, Columbia, and Mr. E. R. Sunderland, Michigan.

OFFICERS.

The following officers were elected for the ensuing year :

President, MR. R. M. ALDEN, Pennsylvania.

First Vice-President, MISS MABEL HURD, Barnard.

Second Vice-President, MR. D. H. BISHOP, Vanderbilt.

Third Vice-President, MR. E. R. BUCKLEY, Wisconsin.

Recording Secretary, MR. PERCIVAL HALL, Columbia.

Corresponding Secretary, MISS MARY BARTOL, Pennsylvania.

Treasurer, MR. HENRY LLOYD, Chicago.

Mr. Neilson extended to the Federation an invitation to hold its next annual Convention at Harvard.

OFFICERS OF GRADUATE CLUBS.

MAY 1, 1898.

The following list of the chief officers of the Graduate Clubs affiliated in the Federation of Graduate Clubs presents the results of reports received by May 1st, 1898.

Woman's Graduate Club of Columbia University.

[Barnard College.]

Pres., ELSIE WORTHINGTON CLEWS.

V. Pres., LOUISE BRISBIN DUNN.

Sec., ADALINE CASWELL WHELOCK.

Treas., ESTELLE ELKUS.

OFFICERS OF GRADUATE CLUBS

The Graduate Club of Brown University.

Organized in 1890.

Pres., FREDERICK E. WHITAKER.*V. Pres.*, MILLER M. FOGG, JR.*Sec.*, MABELLE A. CAFFREY.*Treas.*, HENRY W. N. BENNETT.**The Bryn Mawr Graduate Club.**

Organized in 1893-4.

Pres., MARY HELEN RITCHIE, Bryn Mawr. *V. Pres.*, MARY DELIA HOPKINS, Bryn [Mawr.*Sec.* GEORGIANA GODDARD KING, Bryn [Mawr. *Treas.*, MARY CLOYD BURNLEY, Woman's [College of Baltimore.**The Graduate Club of the University of California.**

Organized in 1895.

Pres., MISS E. B. WOOLSEY.*V. Pres.*, MR. J. J. GALLAGHER,*Sec.-Treas.*, MISS M. M. WHEELER.**The Graduate Club of the University of Chicago.***Pres.*, FREDERICK A. CLEVELAND, De Pauw. *V. Pres.*, OTIS W. CALDWELL, Franklin.*Rec. Sec.*, MAUDE T. RADFORD, U. of Chicago. *Cor. Sec.*, ELIZABETH FAULKNER, Old U.*Treas.*, HENRY M. ADKINSON, U. of Chicago. [of Chicago.**The Students' Association of Clark University.**

Organized January 24, 1896.

Pres., W. G. CHAMBERS, Lafayette.*V. Pres.*, J. VAN DER VIES HOPE.*Sec.-Treas.*, G. E. PARTRIDGE.**The Graduate Club of Columbia University.**

Organized in November, 1893.

Pres., C. M. LACEY SITES, Ohio Wesleyan [University. *V. Pres.*, L. B. MCWHOOD, Columbia.*Sec.*, G. A. GOODELL, Amherst.*Treas.*, J. H. DYNES, Adelbert.**The Graduate Students' Club of Cornell University.**

Organized in 1895.

Pres., C. H. PAMMELKAMP, Cornell.*1st V. Pres.*, MISS COX.*2d V. Pres.*, G. A. SMITH.*Sec.*, MISS ELLERY, Vassar.*Treas.*, W. S. FERGUSON.**The Graduate Club of Harvard University.**

Organized in February, 1889.

Pres., W. A. NEILSON, Edinburgh.*V. Pres.*, M. BENSHIMOL, Harvard.*Sec.*, G. W. BENEDICT, Vermont.*Treas.*, H. R. MEYER, Harvard.

Pres., LIDA SHAW KING. *Sec.*, BERTHA M. PILLSBURY.
Treas., ETHEL D. PUFFER.

OFFICERS OF GRADUATE CLUBS

The Officers of the Vanderbilt Graduate Club.

Organized in 1894-5.

Pres., D. H. BISHOP, Vanderbilt.

V. Pres., J. A. CHILES, Central.

Sec., HALSEY WERLEIN, Vanderbilt.

Treas., C. R. BASKERVILL, Vanderbilt.

The Graduate Club of Wellesley College.

Pres., GRACE E. TOWNSEND, Wellesley.

Sec., MIRIAM HATHAWAY, Wellesley

Treas., HARRIET CARTER, Wellesley.

The Western Reserve Graduate Club.

Organized March 14, 1895.

Hon. Pres., Dean ROBERT WALLER

Pres., MORRIS WILLIAM CROLL.

[DEERING.

Sec.-Treas., HERMAN JULIUS LENSNER.

The Graduate Club of the University of Wisconsin.

Pres., WILLARD G. BLEYER, Wisconsin.

V. Pres., MILDRED L. HARPER,

Sec., E. J. A. RICE, Gates.

[Wisconsin.

Treas., C. M. SMITH, Wisconsin.

The Association of Departmental Graduate Clubs of Yale University.

Pres., Dean A. W. PHILLIPS, Yale.

V. Pres., W. M. STRONG, Yale.

Sec.-Treas., J. G. ELDRIDGE, Yale.

THE RELATION OF PHILOSOPHY TO OTHER GRADUATE STUDIES.

THE theory that certain subjects are indispensable to a liberal education has suffered much in recent times, and there are no signs that it will again receive the unquestioned acceptance of former years. It may, therefore, seem inopportune to advocate the claims of any subject to a place in all university education. For the past few years the need of thorough scholarship in special fields has been rightly emphasized. We became restive under the standards which obtained when classical scholarship showed its activity by re-editing German editions and translating their notes, and when controversies in other fields were waged by citing German authorities. We demanded that our instructors should not merely know what others are doing, but do something themselves. We have recognized that to do this men must devote their entire energies to specific subjects until they are masters of some small corner on which they can speak with authority. Specialization has been the great movement of the past twenty years, and we can not question either its necessity or its value.

But in this advance one fact has been left temporarily in the background. A large proportion of these graduate and special students are to do their work, not primarily as investigators in universities, but as teachers in colleges and secondary schools. College authorities have frequently expressed their disappointment with the results of this special study. Men who come armed with the doctorate from the university often prove, it is maintained, not to be teachers at all in the proper sense. They may lack in breadth and cultivation, or in the ability to interest and the patience to instruct. While a Doctor of Philosophy is theoretically a teacher of philosophy, that is, of science in the most inclusive sense, practically he is often neither a teacher nor philosophic. Of course, there are certain causes for failure which are palpable. Where there is neither enthusiasm nor method, success cannot be expected. And unless he is a born teacher, the graduate

student's interest in the pedagogical aspects of his special study needs constant stimulation—perhaps needs actual experience in teaching for its adequate motivation—so that the teacher may not assume that his college students will be interested at the outset in the special problems which now engage his own research.

But the trouble with the young Doctor of Philosophy is not solely a lack of pedagogical instinct and training. I do not think it entirely fanciful to say that some fail because they have lost from view too entirely that aspect of their work which is suggested by the second word in their title. It seems to me that there is a real basis to the preference which is generally felt for the title *Doctor of Philosophy* as compared with the formerly equal title *Master of Arts*, or even with the nominally equal grade of *Doctor of Science*, and that this basis—aside from the facts of relative advertising power, and of the actual requirements made for the degrees—consists in this: that the teacher of any subject ought to grasp and present that subject in what we properly call a philosophic manner. I should go farther and say, using the word philosophic in no technical or pedantic sense, that the teacher of men and women should bring to his work a philosophic consideration of life itself, its end and significance, its ideals and values.

It may be that the candidate may disclaim any aspiration to be a guide, philosopher, and friend. He may profess that he claims and desires to do nothing more than teach Greek or chemistry, and that he does not consider himself responsible for anything else. It is none the less true that the college looks and ought to look primarily to the applicant's fitness to be a teacher in the larger and fuller sense.

It is, moreover, for the teacher's own advantage that this larger ideal be maintained. The insignificant commercial value placed by the community upon the services of the teaching profession in comparison with that placed upon the services of the doctor or lawyer, not to speak in the same breath of the managers of business enterprises, must tend to cheapen the profession in the public eye, unless there are counteracting influences. Further than this, if a profession is largely depreciated in public opinion, the most vigorous minds will be naturally attracted elsewhere, and the profession will suffer accordingly. Discussions last

summer showed how prone the man of affairs is to think that the college president or professor, whom he hires as cheaply as he would a clerk for his office, should of course presume to have no opinions of his own unless authorized by his employer, and it was the protests of men who showed that they were more than mere specialists, and of others in all occupations who stood with them for the larger function of the teacher, which prevented the threatened degradation of the teacher's work.

In Germany the teaching profession has certain external supports in maintaining its dignity and power which are lacking here. There the mere title of *Herr Professor Doktor* gives social station and commands respect even in political affairs. The expert, the specialist, is as such held in honor. In this land of equality a professor is regarded with some degree of suspicion or condescension, the theorist is sneered at, and the specialist has no sanctity attaching to his person. I do not mean to imply that the work of the American teacher is less attractive, but I do assert that in this country there are few or none of the external attractions which obtain in Germany for the professor *an sich*. If the American teacher is to retain self-respect, he must find it in the intrinsic value of his work. If he would have the compensating satisfaction of influence, he must seek it, not as doctor, but as man. And while the doctor and professor count less among us than elsewhere, I believe the man counts more. The militarism and centralization which are so dominant in church and state in the land of the Kaiser are not so favorable for the teacher's personal influence as the democratic condition where public institutions, though less well administered, are yet constantly educating the people and remain in touch with them; where the value and standards of life are not absolutely fixed in advance for the young by all the traditions of a continuous past; and where, amid all the crudity, the materialism, and sometimes even the vulgarity, there is yet life, pulsing with energy and responsive to the quickening touch of the real man or woman.

It is the opportunity to stir and in some degree to shape this life which gives greatest value to the teacher's work, and any curtailment of capacity for this work must inevitably react disastrously upon the profession. You are now planning to teach language or history or

science. I feel confident that you will come to place the emphasis rather on teaching *men* and *women*. For you know perfectly well, though you may ignore it, that most of your students will not remember the language or the science or the history, and if you have done nothing more for them, if you have been nothing to them but a text-book and an examiner, you will inevitably become as obsolete as your lectures, and sink into oblivion with your subject, where not even the consciousness of having produced a thesis or a book will be a wholly adequate compensation.

Four-fifths or nine-tenths of college students are in training, not for a life of investigation, but for a life of activity in other lines. And while it goes without saying that training for efficient work of any kind is to be secured only by thoroughness and scholarship in the various subjects studied, it is none the less certain that the man behind the desk ought always to be larger than his subject, that he should know how to invest his theme with all the interest which attaches to it from its relations to other fields, and that he should be keenly alive to that supreme interest which directly or indirectly may belong to every department, to wit, the significance of the special problem for the great whole of science, and the value of this whole of science in the yet larger whole of humanity's weal and progress.

It is far enough from my purpose to claim that these great aims of philosophic, scholastic breadth of culture and personal power will be attained by the mere attendance upon a course of study in any subject. I attempt the more modest task of showing that philosophic study is fitted to perform an important function in the attainment of all these ends.

And first as to the bearing of philosophy on the comprehension of the special field of investigation. It may be our most direct course to take an apparently devious route and look first of all at the nature and motive of all scientific study. Science is knowledge; but what is it to know? Knowing has been variously defined as apprehending causes, discovering laws, classifying and systematizing facts, but in all these processes it will be found that we are relating, we are viewing a part in the light of some larger whole which we call a law or a historic

unity. If you will pardon a more technical expression, knowing is a discovery of some general or universal and an interpretation of the particular in terms of the universal thus discovered. It must, of course, be understood that by universal is not meant an absolute, fixed whole, but the constantly growing background of relations and law by which the mind illumines each new fact or event, and which is in turn modified and enlarged by its application to the inexhaustible richness of the material interpreted. This is the essence of all knowledge, and there are two general ways in which this process is employed, giving rise to two general groups of sciences, with their respective methods. We may view the particular fact in the light of an abstract law, as in physics or economics; or we may view the fact as constituting part of a concrete whole, and seek its relations to past and future, as in history. But in either case, whether we seek laws of light, laws of production, or laws of syntax, or whether, on the other hand, we trace the history of a planet, of a nation, or of a literature, we are always relating; and relating means discovering the identity in variety, the unity in difference.

If, further, we ask for the motive for science and are not satisfied by the wise word "curiosity," or "wonder," I suppose we shall have to find our ultimate answer in the statement that the mind seeks to know, to interpret, because the mind itself is just such a unity in variety as it would find in its world of science, and only as it finds unity in variety can it come to birth and develop. Intelligence grows by organizing what it finds, and it organizes that it may grow.

If all this is very trite, it is nevertheless true that the significance of these principles as to the nature and motive of study is often lost sight of in our scientific work, and especially when we turn from our special research to the work of the teacher. For the growth of science has brought with it inevitably the division and subdivision of the territory to be possessed, and in the execution of the command which has gone forth to divide and conquer it not infrequently happens that the victorious companies seem to forget what purpose sent them forth, or in whose name and interest they are taking possession. In other words, division of labor means that each department considers some

one aspect of reality. Its work is, therefore, necessarily abstract. And this has important consequences both for the science itself and for the teacher's problem of awakening interest in the science.

For the science itself this abstractness exhibits itself in the conceptions which it postulates as fundamental units to be used in the explanation of all the processes with which it deals. Thus physical science in general postulates a mechanical theory of energy and takes for its task to express all natural processes in terms of energy. Economics postulates desire for wealth, and formulates the laws of human action in terms of this unit of value. The biological and other sciences which employ the great principle of evolution all postulate that the later is to be explained by the earlier, the more complex by the more simple. Now all these postulates are valuable for the sciences which employ them, but the student who knows merely his own special field is in danger of supposing that these postulates are not merely useful or possibly indispensable points of view for the study of *certain aspects* of experience, but are axioms of absolute validity for the interpretation of the world.

It often strikes the student as a reversal of the true relation, when he is told that all sciences except philosophy are in some sense abstract, but it is none the less true, because they all by necessity deal with *parts* of reality. The crude materialism sometimes professed by those who deal with the mechanical aspects of the universe, the sentimentality sometimes shown by those who consider only its æsthetic aspects, the indifferent aloofness sometimes laid to the charge of those concerned with the commercial aspect of human relations, are all the natural results of taking the part for the whole, the abstract for the concrete. Matter apart from mind, literature and art apart from life, supply and demand apart from sympathy and justice, are all abstractions, and need continual reference to the whole from which they are separated.

Such a narrowness as this is not merely injurious to one's *Weltanschauung*, it is most unfortunate for the development of the special science. We have but to mention Riemann and Helmholtz, Darwin and Huxley, Comte and Mill, to note how often the men who have been most stimulating in the investigation of special sciences have

been those who have stood enough outside their science to realize the abstract and hypothetical nature of its fundamental postulates, and to seek to illumine it afresh by more searching criticism and a more central point of view.

I am well aware that the modern theory of specialization is not so much a division of territory as a division of problems, and that any problem may take the student through a wide range of pursuit—that to study the nerve-cell may call for anatomy and physiology and chemistry and physics and psychology—but this, it seems to me, calls all the more for a philosophic standpoint and method. The botanist of today might conceivably quote to the philosopher the lines of Tennyson, and say:

I study not the plant alone,
But the mystery of the universe ;
For if I could know yon little flower
Root and all, and all in all,
I should know what God and man is.

But the philosopher can reply in turn: "True, indeed; but the converse is just as true. You will know the little flower, root and all, and all in all—when? When you know what God and man is, and not until then." No aspect of reality will be completely known until it interpreted in relation to the whole.

I have taken the above illustrations chiefly from the natural sciences, but it would be easy to show that literature, language, and history suffer as severely from the abstractness of their standpoint, unless the student is conscious of this abstractness. How easy it is for literary criticism, for example, to become gush of sentimentality because beauty and imagination are used as ultimate categories, without psychological analysis and without reference to that development of human life and thought which has sought expression in artistic form. How history has suffered at the hands of those who have made it the annals of kings and the record of battles!

Professor Stephens, of Cornell, in a charming informal talk on the aim of the modern historian, reiterated the statement that it is the aim of the scientific writer of history, not to be interesting, but to tell the

truth. This doctrine was doubtless in point for the audience which he was addressing, but I am confident that Professor Stephens is too good a historian not to be fully aware that no historian tells the whole truth, and that a recital of facts is anything but history. He must tell the truth, but what truth shall he tell? The facts of a single day, if all recorded, would occupy more volumes than have ever yet been written. The historian's special task is quite as truly in the selection of his material and the perspective of his survey as in the verification of facts. And the great historian is surely he who apprehends most profoundly the great interests of humanity, and selects what is of greatest import for human progress, who has the keenest insight into the forces of character, and portrays institutions, laws, politics, in the light of human nature as a whole.

I repeat, then, that every science must inevitably suffer as a science, unless its abstractness is recognized, its postulates criticised, and its one-sidedness corrected by frequent consideration of its relation to intelligence as a whole.

If it is true that any science suffers in its own development from isolation, it is even more true that every department of study, when taught in college or secondary school, will suffer, unless every effort is made to illumine it by making it a part in the whole of human interest. This, it seems to me, is the root of the difficulty in the early teaching of many graduate students. They are themselves intensely interested in some very special problem. Their own horizon has been advanced, their own interest has gone with it so far that this problem seems vital. On it may depend a whole group of other problems which perhaps are now most under discussion in the journals and reviews. But the average young man (or even young woman) is not exclusively absorbed in knowledge *per se*. He may at first be quite careless as to the significance of the latest theories about the subjunctive. He may be willing to remain in ignorance as to whether a given fossil is eocene or meiocene. He does not feel it to be of the greatest importance to know whether Kant was "roused from his dogmatic slumber" by Hume in 1763, or in 1769, or possibly not until 1773. Perhaps it is just as well, on the whole, that he does not, and it will not be safe to dub him stu-

pid on that account. At any rate, if we wish to gain his attention, we must start with *his* interest, and not with our own, and this will involve that the subject should be presented in something of the order in which every science has struck root and grown, first the more general, then the more special.

It would be as natural to expect a tree to grow by collecting leaves or branches, as for the mind to develop by the pursuit of facts not kept in vital relation to the unity of conscious intelligence. Science has been a constantly branching trunk. We cannot expect the individual student to begin at the ends and grow in.

Moreover, the graduate student is apt to forget that he is himself, so to speak, an abnormal product of civilization. He is interested in knowledge for its own sake. He forgets that this is not universal in the race. Or at least he assumes that every college student certainly should find this a sufficient spring to toil, and a sufficient joy in labor. Taking college students as we find them, however, we must confess that love of knowledge *per se* is not the all-absorbing passion of their lives. It is such for the scientist, because he has staked all his weal or woe on success in this field. His scientific self is his deepest, most real self. Self-assertion, self-development, life itself, for him consequently takes the form of scientific interest. But the self of the average undergraduate is not so. He is to find his true self in commerce or politics, as preacher or reformer, and where his treasure is there will his heart be also. Now, whether he is to be interested in the problems which are so dear to the heart of the scientific man will depend largely on the mode of presentation. If they are presented in an isolated way, it will require extraordinary personal enthusiasm to stir any interest at all. But if the teacher has constantly in mind the actual self of his student, and makes that his point of departure; if, further, he grasps his subject in all its relations to the activities of thought and of life, and presents it at the outset with constant regard to these relations, he is far more likely to gain a hearing. Then he may proceed to widen his hearers' horizon until it stretch off indefinitely with increasing interest, perhaps to reach his own.

Nor is it, as some may think, derogatory to the dignity of a science

that it should rest to some degree on foreign support. It is difficult to suppose that the day will ever dawn when the highest interest of any science will not properly lie in the light it sheds on the universe as a whole. But the universe of knowledge will always center in the mind of man and find its worth estimated in the aspirations and appreciations of human activities and human feeling. The sooner that this is recognized in our educational plans, the better it will be, both for the particular sciences and for the work of education as a whole.

It may seem that I have thus far sedulously and with considerable success avoided the topic which was announced as the subject of the paper. But I have really had it constantly in mind. The thesis has been maintained that the specialization in science needs to be supplemented from the standpoint of science as a whole; that this is necessary for the sciences themselves that the abstractness of their concepts and postulates may not be lost sight of, and necessary especially for the college teacher that he may supply to the special all possible significance and interest. Philosophy aims to do just this work of criticism and relation. Philosophy has no disposition to aspire to construct a universe, to create a moral life, to prescribe canons to art. It finds more than enough in the task of understanding the world as it is, of interpreting the actual, moral, and artistic activities. In this it is at one with all science. But whereas science, in the ordinary usage of the term, is not one, but many, philosophy aims above all, never to lose from sight the unity of knowledge and the unity of life. For the abstractness of the special sciences consists not merely in their division of the field, but even more in the fact that they are obliged to leave out of account the relation of all knowledge to the mind which knows, and of all principle of explanation to the intelligence which gave them birth. To the scientist, space and time, law, energy, and cause are ultimate and objective. But the philosopher cannot rest there. He sees that these are ultimately just the mind's ways of explaining. The student of law or history or literature may assume personality, right, or beauty as ultimate; the philosopher will see that these, too, are but concepts for interpreting forms of inner experience, and will push back his analysis to discover these experiences themselves. Harnack has

said that we study history to free ourselves from the past. I conceive that we are not really educated men unless we so study as to free ourselves from the dogmatism of any science which does not criticise its own fundamental assumptions, or from the barrenness of an art or literary criticism which treats any form as ultimate, and does not seek its principles in the inexhaustible interests of the human spirit.

Philosophy, then, aims first of all to overcome the abstractness of the special sciences by showing their relation to the mind itself. Such in part is the work of psychology, of logic, of ethics, of æsthetics, and, finally, of metaphysics. It further aims to relate science, literature, politics, as varied forms of human activity, to human thought and progress as a whole, and thus to correlate all these expressions of man's advancing life. This forms in part the task of the history of thought.

The question may now be asked, What special work could be recommended to the candidate for the doctor's degree? Psychology is so generally recognized today that it is perhaps scarcely necessary to speak of its importance. Its study should properly come, as is the case in most institutions, as a part of the undergraduate work. Coming now to graduate study, two general lines of work seem indicated. Students of natural science would find most help in a study of the methods and conceptions involved in their own problems. Such a course might be in part historical and in part critical, showing the development of scientific thought and the relation of the scientific view of the world to other aspects. The student of literature or history would find his needs better met by a study of the history of thought, supplemented in the one case by æsthetics and in the other by political ethics. Such courses would naturally be less technical than courses designed exclusively for philosophical specialists; but this would perhaps be for the good of the instructor. Philosophy may be pursued as one-sidedly and technically as any other subject, and if it would be true to its function, it must ever maintain the most intimate relations with the sciences that have gone out from it.

Nor would I be understood as implying that philosophy is taught only by its professors. The masters in all the sciences bring to their work a philosophic spirit; but the average student should find much

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aid and suggestion from the work of those who by necessity are forced to give their whole attention to the lines of work described. It ought at any rate to aid in gaining something of a philosophic attitude toward the problems of a special field.

I have left until the last the question as to the value of philosophy for the conduct of life, and for the teacher's personal power. I must assume that every teacher has something of this, however vaguely, in his plan. Every investigator may well ponder the words of a man who was not merely a philosopher, but was among the most rigid and profound investigators, who is known not merely as the expounder of the categorical imperative, but as the promulgator of the nebular hypothesis, to whose name and genius every scientific man in Germany does homage.

"I am myself," wrote Kant, "by bent and inclination an investigator. I feel his whole thirst for knowledge, and the eager anxiety to push farther, or, again, the satisfaction which waits on every step in advance. There was a time when I believed that this constituted the true honor of man. I despised the ignorant common herd. Rousseau set me right. This illusory pre-eminence vanishes. I learn to honor men, and should find myself much less useful than the common laborers if I did not believe that my work could give worth to all others, by establishing the rights of man."

The teacher who would fill the place of a human being as well as that of a lecturer must certainly aim to "see life steadily and see it whole." If he would feel that he, too, is in some measure a force in human progress, a helper toward the "larger life that is to be," he must certainly look thoughtfully and broadly upon the end and meaning of human life. He must weigh its current values, and question its present standards. His may not be the swift blood which stirs the reformer, or the eloquence which lifts the multitude. But the world needs candor and sanity as well as conviction and fervor, light as truly as heat; and the teachers of the country, though they may not be able to solve the deeper problems of life and society, cannot be called liberally educated unless they can show their students and the public an example of a candid and sympathetic attitude toward these prob-

lems. They may show that the broadening of vision does not necessarily mean the loss of enthusiasm. They may show that education stands neither for a radicalism that would lose the ideals, the standards, the goods of the past, nor for a dead conservatism that would remain in unchangeable allegiance to them; neither for a zeal that outruns judgment and so brings on reaction, nor for a cold-blooded aloofness which has no sympathy with the struggling humanity outside the schools. If they can do this, they will contribute their especial part in human progress. They will retain self-respect and the respect of those whose respect is worth having, and no teacher ought to be satisfied without some measure of such influence. For the attainment of such a standpoint philosophy ought to contribute much. Ever since the declaration of Socrates that a life without examination is not a life worthy to be led by man, ethical science has sought to bring its disciples to a consideration of life's ultimate standards and values, and in this is found the fitness of the motto of the Phi Beta Kappa Society: "Philosophy the guide of life." In proportion as philosophy can do this, it may be recommended to the consideration of all students and teachers, whatever the special field in which their task may lie.

J. H. TUFTS.

THE UNIVERSITY OF CHICAGO.

RECIPIENTS OF THE DOCTOR'S DEGREE IN 1897.

WITH TITLES OF THESES.

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BYRN MAWR.

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RADCLIFFE.

Harvard University does not yet give the degree of Doctor of Philosophy to women. The following extract is taken from Dean Irwin's report incorporated into the Annual Reports of the President and Treasurer of Harvard College 1896-97, p. 266 :

"I respectfully submit the following communication from Professor Kittredge, Chairman of the Division of Modern Languages in Harvard University, to the Dean of Radcliffe, under the date of June 23, 1897 :

"Miss KATE O. PETERSEN, of Radcliffe College, has fulfilled such conditions of residence, study, and examination as would, if she were a student in Harvard University, entitle her to the degree of Doctor of Philosophy. . . . She has prepared a thesis "On the Sources of Chaucer's *Nonne Prestes Tale*" which gives evidence of careful study and of original investigation, and which is distinctly a contribution to knowledge. . . .

"In order that there may be no doubt or question concerning this matter, I wish to certify that all the conditions that would have been required of a student in Harvard University, namely (1) residence and study, (2) the preparation of a thesis, and (3) the passing of an oral examination, were amply and creditably fulfilled by Miss Petersen."

VANDERBILT.

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The Negro in Southern Literature.

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CHARLES HAMLINE ZIMMERMAN.

The Independent Subjunctive in Tac-
itus.

INTRODUCTORY ANNOUNCEMENTS.

BARNARD COLLEGE.

The incorporation of Barnard College in 1889 was preceded by a movement six years earlier, by which the Trustees of Columbia offered degrees to women who should pass the necessary examinations. Barnard College was founded by private donations to meet the needs of such candidates. It is closely affiliated with Columbia University. Its instructors are members of the University staff, and its requirements for admission are identical with those of Columbia College. All examinations are conducted by Columbia University. Besides duplicating as far as possible the undergraduate work of Columbia, it registers graduate women students for the University. All degrees are conferred by Columbia. The Departments of Philosophy—including Teachers' College—Political Science, and Pure Science, in Columbia University, now offer work to graduate women on the same terms as to men. Laboratory work, however, is done by the women at Barnard College.

All general academic statements made by Columbia apply equally to Barnard. EMILY JAMES SMITH, Dean. Address MISS ELIZABETH METCALF, Secretary to Dean, New York City.

BROWN UNIVERSITY.

The University was founded by the Philadelphia Baptist Association in 1764, the first commencement being held in September, 1769. For the year ending April 15th, 1897, the endowment yielding interest was \$809,419.80. The income for current expenses was \$140,906.45. Degrees were first granted to graduates from the Graduate Department in 1889. The advanced degrees of Master of Arts and Doctor of Philosophy are conferred. By a graduate course is meant one primarily intended for those who have already attained one of the academic

degrees. Women are admitted on the same terms as men, but undergraduates are instructed in separate classes.

The year begins on the third Wednesday in September, is divided into **three terms**, and ends on the third Wednesday in June. E. BENJAMIN ANDREWS, President. Address FREDERICK J. GUILD, Registrar and Secretary of the Faculty, Providence, R. I.

BRYN MAWR COLLEGE.

Founded in 1880 with the endowment of Dr. Joseph W. Taylor, the College opened in the autumn of 1885. The realized endowment, excluding buildings and grounds, is about \$1,000,000. The College is an "institution for the advanced education of women." It admits four classes of students: graduates, undergraduates, special students, and hearers. Special students must have passed the examination for matriculation. Hearers attend courses by the consent of the several instructors and receive certificates from them only. The Graduate Department was organized in 1885. Degrees of Master of Arts and Doctor of Philosophy are granted. A graduate course is one that presupposes a minor, major, and post-major undergraduate course (*i. e.*, three years of undergraduate instruction), and to which only students that have the A.B. degree, or its full equivalent, are admitted.

The year is divided into semesters. For 1898-9 the first begins on October 4th, and the second on February 13th. M. CAREY THOMAS, President. Address MADELINE VAUGHAN ABBOTT, Secretary, Bryn Mawr, Pa.

UNIVERSITY OF CALIFORNIA.

Founded by an act of the Legislature in 1868. The University is a State institution, having an income of about \$420,000. Graduate instruction has been carried on since 1874. The following degrees are granted: Master of Arts, Master of Letters, Master of Science, Doctor of Philosophy. Graduate courses presuppose a full undergraduate training, and are chiefly intended to develop professional scholars and specialists who shall be able to carry on original research. Women are admitted on equal terms with men.

The year is divided into two terms. For 1898-9 the terms extend from August 15th to December 24th, and from January 16th to May 17th. MARTIN KELLOGG, President. Address JAMES SUTTON, Recorder of the Faculties, Berkeley, California.

UNIVERSITY OF CHICAGO.

Founded by John D. Rockefeller in 1890, the University was opened October 1st, 1892. The realized endowment at the end of the last fiscal year was \$4,000,000. The income was \$590,000. Assets of the University, including funds subscribed and those now in hand, exceed \$10,000,000. The Graduate Schools were organized with the University in 1892. The degrees of Master of Arts, Master of Science, Doctor of Philosophy, and Doctor of Science are granted, and may be conferred at the end of any quarter. No definition of a graduate course is given. Women are admitted on the same terms with men.

The year is divided into quarters beginning on the 1st of July, October, January, and April. WILLIAM R. HARPER, President. Address THE UNIVERSITY EXAMINER, Chicago, Illinois.

CLARK UNIVERSITY.

Founded in 1887 by Jonas G. Clark, the University was opened in October of 1889. It admits only graduate students and confers only one degree, that of Doctor of Philosophy. Its courses presuppose a knowledge of what is usually required by the best colleges in each department as a condition of the degree of A.B. Women are not admitted.

The year begins October 1st. G. STANLEY HALL, President. Address LOUIS N. WILSON, Clerk, Worcester, Mass.

COLUMBIA UNIVERSITY.

Founded in 1754 by royal charter from George II as King's College. After the war for American independence the name was changed to Columbia. The College was thus known until 1896, when reorganization was effected. The institution is now Columbia University

and as such includes both a college and a university. The faculties of the University are: Law, Medicine, Philosophy, Political Science, Pure Science, and Applied Science. These faculties have charge of all the graduate work besides the professional instruction in law, medicine, and applied science. Teachers College, a professional school for teachers, while financially an independent corporation, is also a part of Columbia University. Students have matriculation privileges at Union Theological Seminary. The degrees conferred are Master of Arts and Doctor of Philosophy.

The present site is on Morningside Heights and comprises the blocks from 116th Street to 120th Street, between Amsterdam Avenue and the Boulevard. Barnard College for women is in the immediate vicinity. Receipts for 1896-7, \$774,852.43; expenditures (not including building and grounds), \$808,944.45.

The year is divided into two half years. For 1898-9 these begin October 3d and February 13th. SETH LOW, President. Address WM. H. H. BEEBE, Secretary of the University, New York City.

CORNELL UNIVERSITY.

Founded in 1865, and endowed with New York's apportionment of public lands under the Morrill Land Grant Act, supplemented by large gifts from Ezra Cornell, the University was opened in 1868. For the year ending August 1st, 1896, the endowment was \$9,787,445.89, and the income, \$525,703.59. Graduate instruction has been given since 1868, the first advanced degree being conferred in 1870. There is a separately organized Graduate Department, the work of which is in charge of the University Faculty, which consists of all the professors and assistant professors in the University. Degrees of Master of Arts and Doctor of Philosophy are conferred. Cornell does not define a graduate course. Many courses are given exclusively for graduates. Graduates are admitted on option to most of the undergraduate courses. Women are admitted on the same terms with men.

The year is divided into three terms. For 1898-9 these begin September 13, January 13, and April 4. JACOB GOULD SCHURMAN, President. Address THE REGISTRAR, Ithaca, N. Y.

HARVARD UNIVERSITY.

Founded in 1636 by the vote of the General Court of Massachusetts. The realized endowment at the close of the fiscal year 1897-8 was \$8,963,053. Income was \$1,327,360.

The Graduate School has come into existence as a result of action taken in January, 1872, by the Corporation and Overseers of Harvard College, in the establishment of higher degrees in Arts, Science, and Philosophy, to follow upon the degrees of Bachelor of Arts and Bachelor of Science, and has had for its object the development of instruction suited to the needs of persons qualifying themselves for such higher degrees, or otherwise engaged in advanced study. Until 1890 it had little formal organization, and was known as the Graduate Department. In 1890 it was more solidly established under the name of the Graduate School. Many students come to the Graduate School for the sake of instruction only, and do not apply for a degree. Students in the School may attain the degree of Bachelor of Arts, Master of Arts, Master of Science, Doctor of Philosophy, or Doctor of Science, on satisfying the conditions of admission to candidacy, and fulfilling the requirements for the degree, in each case.

The Faculty of Arts and Sciences distributes its courses into three groups, those intended primarily for undergraduates, those for graduates and undergraduates, and those primarily for graduates. The courses in the second group are largely recommended to graduate students. The policy of the University is to draw no hard and fast lines between the groups, but to admit into any course students qualified to pursue it, irrespective of their academic standing. Women are not admitted, but many courses designed primarily for graduates are open to properly qualified students of Radcliffe College.

The year is divided into two half-years. For 1898-9 these begin September 29th and February 13th. CHARLES WILLIAM ELIOT, President. Address RICHARD COBB, Corresponding Secretary, Cambridge, Mass.

JOHNS HOPKINS UNIVERSITY.

Founded in 1867, through the munificence of Johns Hopkins, lectures being first delivered in 1876. University instruction is offered

to advanced and graduate students whether candidates for a degree or not. The only advanced degree conferred is Doctor of Philosophy. The aim of graduate courses is to encourage the student to become acquainted with the best and latest results obtained elsewhere, thus adding to his general culture, but especially to encourage him to become an independent and original investigator in his chosen field of labor. Women are admitted only to the medical department of the University.

The year is divided into two terms, beginning in October and February. D. C. GILMAN, President. Address T. R. BALL, Registrar, Baltimore, Md.

LELAND STANFORD, JUNIOR, UNIVERSITY.

Founded in 1885 by Leland Stanford and Jane Lathrop Stanford, his wife, the University was first opened to students October 1st, 1891. It has a permanent landed endowment of 90,000 acres, has received \$2,500,000 by the terms of the will of Mr. Stanford, \$1,000,000 additional from Mrs. Stanford, and ultimately will become heir to the remainder of the estate. The expenditures of the past fiscal year amount to about \$200,000. The degrees of Master of Arts and Doctor of Philosophy are conferred for courses of advanced work beyond the undergraduate requirements in the various departments. Women are admitted on the same footing with men.

The year is divided into two semesters, the first beginning early in September, the second early in January. DAVID STARR JORDAN, President. Address O. L. ELLIOTT, Registrar, Stanford University, California.

UNIVERSITY OF MICHIGAN.

Founded in 1837, by an Act of the Legislature of Michigan, as a part of the public educational system of the state. The first of its departments was opened in 1841. Its endowment is \$540,000. The income of the last fiscal year was \$399,842.02. The Graduate School was organized in 1892. The degrees of Master of Arts, Master of Science, Master of Philosophy, Doctor of Philosophy, and Doctor of Science

are conferred. No definition of a graduate course is given, but no elementary work in any subject is allowed to count as graduate work. Women are admitted on the same terms with men.

The year is divided into two semesters beginning September 27th, 1898, and February 13th, 1899. JAMES B. ANGELL, President. Address PROF. P. R. DEPONT, Registrar, Ann Arbor, Mich.

UNIVERSITY OF MINNESOTA.

Originally organized by an Act of the Territorial Legislature in 1851, the University was made the "State University" in 1857. Instruction in the college classes was first given in September, 1868. The annual income is about \$270,000. The Graduate Department was definitely organized in 1895-6. The following advanced degrees are conferred: Master of Arts, Master of Science, Master of Literature, and Doctor of Philosophy. A graduate course is understood to be the continuous, systematic pursuit of some topic not offered to undergraduates, and of a more advanced character than work required for a Bachelor's degree. Women are admitted on the same terms with men.

The year is divided into three terms. For 1898-9 these begin September 6th, November 29th, and March 6th. CYRUS NORTHROP, President. Address JABEZ BROOKS, Chairman of Committee on Graduate Studies and Degrees, Minneapolis, Minnesota.

UNIVERSITY OF MISSOURI.

The University was located at Columbia, Boone County, June 24th, 1839. The cornerstone of the main building was laid July 4th, 1840, and this is generally accepted as the date of the foundation of the University. Courses of instruction in academic work were begun on April 14th, 1841. A Normal department was established in 1867. In 1868 the State gave aid for the first time to the University—a sum of \$10,000. The thirty-sixth General Assembly gave the institution an endowment of \$646,985. This made the total endowment, exclusive of buildings, \$1,229,839. This sum bears interest at 5 per cent. per annum. On January 9th, 1892, the main building of the University at Columbia was destroyed by fire. In the following March the Legisla-

ture gave for building and equipment \$236,577. In March, 1893, this fund was increased by a second appropriation of \$264,000, and by \$25,000 additional for a new building for the School of Mines at Rolla. The University is co-educational. The Graduate Department was established in 1896. The advanced degrees of Master of Arts, Master of Science, and Doctor of Philosophy are conferred. RICHARD HENRY JESSE, President. Address IRVING SWITZLER, Registrar, Columbia, Mo.

NEW YORK UNIVERSITY.

Founded in 1831. Instruction began in 1832. Income for fiscal year, \$204,555. The Graduate School was organized in 1886. Degrees of Master of Arts, Master of Philosophy, Master of Science, Doctor of Philosophy, and Doctor of Science are conferred. By a graduate course the University means specialized work by a graduate student under the direction of a professor in such amount as may fitly occupy about one-half of the student's time for an academic year. Graduate courses are given either at the University Building at Washington Square or at University Heights, the site of the University College. All courses are open to students holding Bachelor's degrees. Women are admitted to the courses of the Graduate School on the same terms with men.

The year consists of eight months of work, with an intermission of ten days during holiday time. The year begins October 1st. HENRY M. MACCRACKEN, Chancellor. Address THE REGISTRAR, Washington Square, New York.

UNIVERSITY OF PENNSYLVANIA.

Founded as the Charitable School in 1740 and becoming "the College and Academy of Philadelphia" in 1751, it was amalgamated with the University of the State of Pennsylvania under its present title in 1791. Value of grounds and buildings, \$2,999,874. Productive funds, \$2,077,188. Income, \$424,000; from invested funds, \$78,092.71. The Graduate Department (under the title "Department of Philosophy") was organized January 3d, 1882. The degrees of Master of Arts, Master of Science, and Doctor of Philosophy are conferred. Any

person holding a Baccalaureate degree in Arts, Pure or Applied Science, Letters, or Philosophy may be admitted by the Dean, provided he be found able to undertake the graduate work selected. Admission does not imply candidacy for degree. Students desiring to become candidates for a higher degree must make application to the Executive Committee. Women are admitted to all the courses in this department on the same terms with men.

The year is divided into two terms, beginning October 1st and February 1st. CHARLES C. HARRISON, Provost. Address WM. ROMAINE NEWBOLD, Dean of the Department of Philosophy, Philadelphia, Pa.

PRINCETON UNIVERSITY.

The first charter was granted October 22d, 1746. A second and more ample charter was granted in 1748, and this was confirmed and renewed after the Revolution. On October 22d, 1896, the one hundred and fiftieth anniversary of the signing of the first charter, the title of Princeton University was assumed. Within the last few years the instruction which had been given to graduate students by many of the professors has been systematized and the Graduate Department constituted. In connection with this department the degrees of Master of Arts, Master of Science, Doctor of Philosophy, Doctor of Science, and Bachelor of Divinity are conferred. This department is at present under the care of a committee of the Faculty. Women are not admitted.

The year is divided into two terms of eighteen weeks each. For 1898-9 these begin September 21st and February 9th. FRANCIS LANDEY PATTON, President. Address PROF. WM. F. MAGIE, Princeton, N. J.

RADCLIFFE COLLEGE.

Radcliffe College, the successor of the Society for the Collegiate Instruction of Women, offers systematic collegiate instruction to women under the professors and other teachers of Harvard University. The requirements for admission are identical with those for admission to Harvard College. The courses of instruction given in Radcliffe

College correspond to both undergraduate and graduate courses offered by Harvard University, and are more than sufficient to enable a woman to perform the work required by the University for the degrees of Bachelor of Arts and Master of Arts. In addition to these, graduate students in Radcliffe College now have access to sixty-eight graduate courses in Harvard University. The examinations are the same in both institutions, and the diplomas conferring the degrees of Bachelor of Arts and Master of Arts are countersigned by the President of Harvard University as a guarantee that these degrees are equivalent to the corresponding degrees given by the University.

The arrangement of the academic calendar corresponds to that of Harvard. MRS. LOUIS AGASSIZ, President. Address MARY COES, Secretary, Cambridge, Mass.

VANDERBILT UNIVERSITY.

Founded in 1873 by the munificence of Cornelius Vanderbilt. The general endowment is \$1,100,000; total assets, \$1,882,000; yearly expenditures, \$110,000. Graduate work has been carried on from the beginning. Degrees of Master of Arts, Master of Science, Doctor of Philosophy, and Doctor of Science are conferred. Any course is considered as graduate work which extends beyond the requirement for a Bachelor's degree and which can be counted on higher degrees. All advanced courses are open also to suitably prepared undergraduates. Women are admitted on the same terms with men.

The session begins September 14th and ends June 14th. There are, two terms, the second beginning February 1st. J. H. KIRKLAND Chancellor. Address WILS WILLIAMS, Bursar, or W. M. BASKERVILL, Secretary of the Committee on University Instruction, Nashville, Tenn.

WELLESLEY COLLEGE.

Wellesley College received a charter in 1870, and was opened in 1875 for the purpose of furnishing to young women advantages and facilities for a liberal education. The College consists of twenty-three departments, including those of Art and Music. The College confers

the degrees of Bachelor of Arts and Master of Arts. The work of graduate students is under the direction of a committee appointed from the Faculty of the College.

The academic year consists of thirty-five weeks, and begins on the Wednesday following the fourteenth of September. The year is divided into two semesters. JULIA JOSEPHINE IRVINE, President. Address ELLEN F. PENDLETON, Secretary, Wellesley, Mass.

WESTERN RESERVE UNIVERSITY.

Founded in 1826 as Western Reserve College. Its property is valued at \$2,600,000, and its receipts from funds during the past fiscal year amounted to \$125,000. The Graduate School was established in 1892. The degrees of Master of Arts and Doctor of Philosophy are conferred. All courses open to Graduate Students are considered graduate courses, but starred courses are available only as minors. The College for Women is a Department of the University, and women are admitted to the Graduate School on the same terms as men.

The year is divided into two semesters, beginning September 23d, 1897, and January 3d, 1898. CHARLES F. THWING, President. Address R. W. DEERING, Dean of the Graduate School, Cleveland, Ohio.

UNIVERSITY OF WISCONSIN.

Founded by the State in 1849 and reorganized in 1866. The expenditures for 1896-7 were \$441,623.41. Income for 1896-7 is \$431,687.55. The Graduate Department, which had hitherto consisted mainly of advanced courses given in connection with the various schools, was separately organized in 1895. The degrees of Master of Arts, Master of Letters, Master of Science, and Doctor of Philosophy are conferred. Graduate courses are especially intended to encourage research, and graduate instruction in the several departments presupposes generally the full undergraduate courses—required and elective—in such departments. Women are admitted on the same terms with men.

The year is divided into two semesters. For 1898-9 these begin September 28th and February 13th. CHARLES KENDALL ADAMS, President. Address W. D. HIESTAND, Registrar, Madison, Wis.

- YALE UNIVERSITY.

Founded in 1701 by a charter from the General Court of Connecticut, which endowed the college with an annual grant. Funds, exclusive of grounds, buildings, and collections, amount to about \$5,000,000. Expenditures in 1896-7 were over \$700,000. Graduate instruction was definitely organized in 1847. The advanced degrees of Master of Arts and Doctor of Philosophy are conferred. Women are admitted on the same terms with men to courses leading to the Doctor's degree.

The year is divided into two terms. For 1898-9 these begin September 29th and January 10th. TIMOTHY DWIGHT, President. Address ANDREW W. PHILLIPS, Dean of the Graduate School, New Haven, Conn.



Library





EXPLANATORY.

In brief the plan of these lists of Graduate Courses is as follows:

(1) To use convenient general titles for grouping courses on related subjects, difficulties of classification being met by cross references.

(2) To bring together (within the several departments), under the name of each instructor, all his advanced courses in the particular departments.

(3) To put all the work of each instructor into a form for ready reference by adding a full index of names.

(4) To present brief collegiate biographies of instructors. The omission of these facts in not a few cases has been by request.

(5) To state the numbers of Graduate Students who have taken courses in each department during 1897-8, thus giving an indication of the amount of graduate work actually going on. A Graduate Student often takes courses in two or more departments; such student counts once in each of those departments.

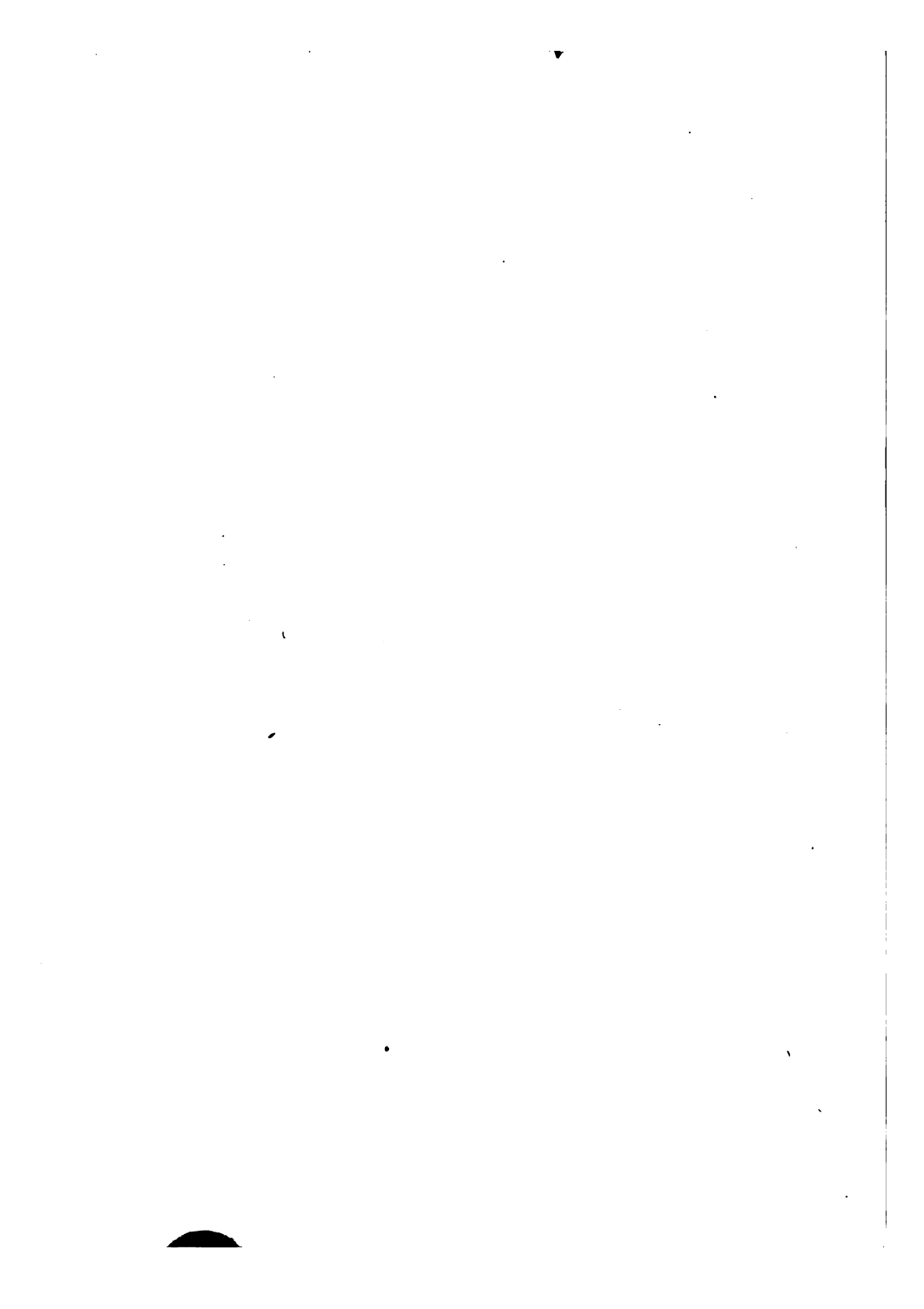
(6) To mention special facilities in each department of the several institutions, with the fellowships and scholarships open to Graduate Students.

(7) To give all the advanced courses definitely offered by each instructor, using short titles, and indicating the number of hours of appointment with the instructor for each course. The number of hours per week is put in small Roman, the number of weeks in Arabic numerals. A dash, followed by a mark of interrogation, calls attention to the absence of specific information. Unless months are given, a course usually extends from September or October to May or June (inclusive). The abbreviations for the names of the months are as follows: Ja., F., Mar., Ap., My., Jun., Jul., Au., S., O., N., D.

(8) To enclose in brackets all courses not to be given in 1898-9. Bracketed courses usually may be expected in 1899-1900.

(9) To mark with the asterisk all courses "not designed primarily for Graduate Students." It should be borne in mind that "Graduate work" in each institution is conditioned by local plans of administration, as well as by the previous preparation of Graduate Students. The marking of a course with an asterisk simply means that (under the conditions prevailing in his institution) the instructor does not offer the course with a primary purpose of meeting the needs of Graduate Students. But the inclusion of the course in these lists indicates that it is often useful to such students.

(10) To combine in a tabular view statistics of instructing bodies, of registration of Graduate Students, of higher degrees conferred in 1897, and of libraries; with concise statements of the requirements for advanced degrees, of fees exacted of Graduate Students, and of fellowships and scholarships open to them.



GRADUATE COURSES

I. LANGUAGES AND LITERATURES.

1. SEMITIC LANGUAGES AND LITERATURES.

[With Semitic History, Biblical Literature, Biblical and Patristic Greek and Latin.]

BARNARD.

¹ Graduate Student 1897-8.

[See Columbia Courses marked B.]

BROWN.

² Graduate Students, 1897-8.

CHARLES F. KENT, Assoc. Prof. of Bibl. Lit. and Hist.

*Hebrew (el). iii, 23, S.-Mar.

*Historical Hebrew. iii, 10, Ap.-Jun.

*Hebrew Seminar. Prophetical Lit. iii, 33.

[The Psalm and Proverbial Lit. iii, 33.]

*Assyrian Seminar. ii, 33.

*New Test. Gk. iii, 33.

*Hebrew Hist. and Lit. iii, 33.

*[Jewish Hist. and Lit. iii, 33.]

DAVID BLAUSTEIN.

*Biblical Aramaic. i, 13, S.-D.

*Syriac. i, 23, Ja.-Jun.

*Assyrian (el). ii, 33.

*Arabic (el). ii, 33.

BRYN MAWR.

⁵ Graduate Students, 1897-8.

Semitic Library of A. Amiaud of Paris.

G. A. BARTON, Assoc. in Bibl. Lit. and Semitic Langs.

A.B., Haverford, '82, and A.M., '85; A.M., Harv., '90, and Ph.D., '91.

Aramaic. ii, 30.

Elem. Hebrew. iv, O.-F.

Hebrew. i, F.-Jun.

Elem. Assyrian. iii, F.-Jun.

Prophetic Literature. ii, O.-F.

Pentateuch. ii, F.-Jun.

New Test. Epistles. ii, O.-F.

New Test. Historical Books. ii, F.-Jun.

Historical Theology (Semitic Religions). ii, O.-F.

Historical Theology (Old Testament Theology). ii, F.-Jun.

[New Testament Greek. ii, 30.]

[The Formation of the Biblical Canon. ii, O.-F.]

[The Bible and the Coran. ii, F.-Jun.]

CALIFORNIA.

¹ Graduate Student, 1897-8.

The Semitic Library is especially rich in works belonging to the Rabbinic Literature (about 3,000 vols.).

JACOB VOORSANGER, Prof. of the Semitic Languages and Literatures.

D.D., Amsterdam.

MAX L. MARGOLIS, Asst. Prof. of Semitic Languages and Literatures.

Testimonium maturitatis, Leibniz Gymnasium, Berlin, '89; A.M., Columbia, '90; Ph.D., same, '91; University Fellow in Semit. Languages, same, '91-2; Assist. Prof. of Biblical Exeg., Hebrew Union College, Cincinnati, '92-97.

*Introd. to Semit. Langs. ii, 33.

[Comparat. Gram. of Sem. Langs. Seminar. i, 33.]

*Hebrew (el). iii, 33.

*Hebrew (adv). iii, 16; ii, 33.

*Sight Reading of Hebr. prose. i, 33.

*Proverbs. i, 33.

Isaiah. ii, 33.

Pirke Aboth. ii, 16.

Jewish Exeg. Writers. ii, 16.

California—continued

- Aramaic and Syriac (el). i, 16.
 [Syriac (adv). ii, 33.]
 [Targumic, Talmudic and Christ. Palest. Dialects. ii, 33.]
 Arabic (el). i, 16; ii, 33.
 Arabic (adv). ii, 33.
 [Arabic Poetry. ii, 33.]
 [Ethiopic. i, 33.]
 [Assyrian (el). ii, 33.]
 [Assyrian (adv). ii, 33.]
 Phoenician Inscr. i, 16.
 Septuagint Greek (in conjunction with the Greek Depart.). i, 33.

CHICAGO.

96 Graduate Students, 1897-8; and 101 in Summer Quarter, '97.

Haskell Oriental Museum. Egypt, and Comparative Religions represented by large collections of originals; Assyro-Babylonian and Palestinian by casts and photographs. Oriental Lib. of 7,000 vols. 3 Fels. in Semitics, 1 in Theology, 1 in N. Test., 1 in N. Test. Greek.

W. R. HARPER, President; Head Professor of Semitic Langs.

A.B., Muskingum Col., '79; Ph.D., Yale, '75; D.D., Colby; LL.D., Univ. of Neb.; Principal, Am. Inst. Sacred Lit.; Principal, the Chautauqua system.

Hebr. Gram. and Syntax (adv). iv, 6, Jul.-Au.

Hebr. Gram. and Etymology (adv). iv, 6, Au.-S.

The Psalter in English. iv, 6, Jul.-Au.

Hebr. Lang. viii, 24, S.-Mar.

Hebr. Life and Thought to Time of Joshua. iv, 12, Jul.-S.

[Arabic. iv, 12, Jul.-S.]

Hebr. Philos. and Ethics (Job, Prov., Eccl., and later Psalms). ii (Sunday), 12, O.-Mar.

O. Test. Lit. and Hist. iv, 12, Ja.-Mar.

[Early Old Test. Traditions. iv, 12, O.-D.]

Later Suras of the Kuran. iv, 12, O.-D.

Hebr. Seminar I, II, and III. ii, 24, Jul.-D.

[Hebr. Philos. and Ethics. iv, 12, O.-D.]

[The Book of Job. iv, 12.]

[O. Test. Insts. and Laws. iv, 12, Jul.-S.]

[Hebr. Life and Thought from Josiah and Ezra. iv, 12.]

[Hebr. Life and Thought from Ezra to the Maccabees. iv, 12.]

[The Hebr. Prophets. iv, 12, Jul.-S.]
 Prophecy and Hist. of Prophecy. iv, 12, O.-D.

[Hebr. Poetic Lit. iv, 12.]

E. G. HIRSCH, Prof. of Rabbinical Lit. and Philos.

A.B., Univ. of Pa., '72, and A.M., '75; Ph.D., Leipzig, '76.

Talmud. iv, 12, Ap.-Jun.

Rabbinical Commentaries on Genesis. iv, 12, Ja.-Mar.

Hebr. Sight Reading. ii, 12, Jul.-S.

[Hist. of Jewish Sects. iv, 6, O.-N.]

Talmudic Analogy to N. Test. iv, 6, N.-D., also My.-Jun.

Rabbinical Philos. iv, 24, O.-Mar.

Gen. Intro. to Rabbinical Lit. and Life. iv, 12, O.-D.

Civil and Crim. Legislation of Talmud. iv, 6, Ap.-My.

Gen. Intro. to Text. Crit. of O. T. iv, 12, O.-D.

Mishnah. iv, 12, Ja.-Mar.

Talmud. Seminar. ii, 36, O.-Jun.

Philosoph. Lit. of Arabians. iv, 12, Ja.-Mar.

Mandaic. iv, 6, Ap.-My.

Ethiopic. iv, 6, My.-Jun.

IRA M. PRICE, Assoc. Prof. of Semitic Langs. and Lits.

A.B., Denison, '79; Prof. of Greek, Des Moines, '79-'80; D.B., Bapt. Union Theol. Sem., '82; Instr. Amer. Inst. Hebrew, '82-'4; Ph.D., Leipzig, '86; Instr. in Semitic Langs., Bapt. Union Theol. Sem., '86-'8; Prof. Semitic Langs., '88-'92.

Hebr. Lang. viii, 24, S.-Mar.

Kings and Parallel Assy. Records. iv, 12, Jul.-S., and iv, 12, O.-D.

Bk. of Jeremiah (Eng.). iv, 6, Au.-S.

Hist. Hebr. Bks. of Samuel. iv, 6, Au.-S.

[Hist. Prin. and Methods of O. T. Interp. iv, 12, Ap.-Jun.]

Adv. Hebr. Gram. Etymol. iv, 6, Au.-S.

- Bk. of Judges. iv, 12, O.-D.
 [Formation of Prophetic Bks. iv, 12, Ap.-Jun.]
 Hebr. Lexicography. Sem. ii, 12, O.-D.
 [Psalter. iv, 12, Jul.-S.]
 Canon and Text of O. Test. iv, 12, Ja.-Mar.
 Isaiah. iv, 12, O.-D.
 [Isaiah. iv, 12, Ja.-Mar.]
 Old Babyl. Inscript. iv, 12, Ap.-Jun.
 Jeremiah. iv, 12, Ja.-Mar.
 [The Book of Job. iv, 6.]
 [Messianic Prophecy. iv, 12.]
 Mod. Discoveries and the O. Test. iv, 12, Jul.-S.
 [Old Test. Interpretation. iv, 12.]
 [Heb. Syntax. iv, 6, Jul.-Au.]
 [Ezekiel. iv, 12, Ja.-Mar.]
 Palestinian Geography. iv, 6, Ap.-My.
 Palestinian Life. iv, 6, My.-Jun.
- E. D. BURTON, Head Prof. of N. Test. Lit. and Interpretation.
 A.B., Denison, '76; Grad. Rochester Theol. Sem., '82; Assoc. and Prof. in Newton Theol. Inst., '83-'92.
 [Quotations in Paul's Epistles. iv, 6, Jul.-Au.]
 [Bk. of Colossians. iv, 6, Jul.-Au.]
 [Quotations in Gospels. iv, 12, O.-D.]
 Intro. to Synoptic Gospels. iv, 12, Ja.-Mar.
 N. Test. Quotations from O. Test. iv, 12, O.-D., and iv, 6, Jul.-Au.
 Apostolic Fathers. iv, 12, Ap.-Jun.
 Seminar. Theol. of Synopt. Gospels. ii, 12, Ja.-Mar.
 Theol. of Gospel of St. John. iv, 12, Ap.-Jun.
 Seminar. Theol. of Epist. to Rom. iv, 12, Ap.-Jun.
 The Gospel of Matthew. iv, 12, Ap.-Jun.
 The Gospel of John. iv, 12, Ja.-Mar.
 The Epistle to the Galatians. iv, 12, O.-D.
 The Epistle to the Romans. iv, 12, Ja.-Mar.
- G. S. GOODSPEED [see 7].
 Hist. of Hebr. Monarchy. iv, 12, Ja.-Mar.
- [Hist. of Hebrews. iv, 12, Jul.-S.]
 [Beginnings of Hebr. Hist. iv, 12, O.-D.]
 [Exilic and Post-Exilic History. iv, 12, Ap.-Jun.]
 Hist. of Antiquity to Persian Empire. iv, 12, O.-D.
 Contemp. Hist. of O. T., Egypt, Babylonia, Assyria. iv, 12, Ap.-Jun.
 [Oriental Antiquity under Assyrian Domination. iv, 6, Jul.-Au.]
 [Religions of Ancient Semitic World. iv, 12, Ja.-Mar.]
 [Islam. iv, 12, Ap.-Jan.]
- S. MATHEWS, Assoc. Prof. of N. Test. Hist. and Interpretation.
 A.B., Colby, '84, and A.M., '87; Prof. of Hist. and Pol. Econ., same, '89-'94.
 [Social His. of Palestine. iv, 6, Au.-S.]
 The Gospel of Luke. iv, 6, Au.-S.
 Hist. of N. Test. Crit. in 19th Cent. iv, 12, Ap.-Jun.
 Social Teach. of Jesus. iv, 12, O.-D.
 Social Teach. of Apostles. iv, 12, Ap.-Jun.
 [N. Test. Times in Palestine. iv, 12, O.-D.]
 Sources of Life of Christ. iv, 12, O.-D.
 [Life of Christ. iv, 12, Ja.-Mar.]
 Formation of N. Test. Canon. iv, 12, Ja.-Mar.
 Christ. Lit. to Eusebius. iv, 12, Ja.-Mar.
 N. Test. Times in Græco-Roman World. iv, 12, Ja.-Mar.
 Hist. of Apostolic Church. iv, 12, O.-D.
 Life of Paul and Introd. to Pauline Epistles. iv, 12, O.-D.
 [Life of Paul. iv, 12.]
 Hist. of Interp. of N. Test. iv, 12, Ja.-Mar.
 Pol. Hist. of N. Test. Times. iv, 6, Au.-S.
 Sources of Hist. of N. Test. Times. iv, 12, O.-D.
 Social and Relig. Hist. of Palestine in N. Test. Times. iv, 12, Ap.-Jun.
 Critical Introd. to Book of Acts. iv, 12, Ap.-Jun.

Chicago—continued

- Hist. Study of Life of Christ. iv, 12, Ap.-Jun.
Parables of Jesus. i, 12, Ap.-Jun.
- C. W. VOTAW, Instr. in N. Test. Lit.
A.B., Amherst, '88; D.B., Yale, '91; A.M., Amherst, '92; Ph.D., Chicago, '96; Docent, Chicago, '92-3; Associate, Chicago, '94-5.
Writings of Philo. iv, 6, Au.-S.
Writings of Josephus. iv, 6, Jul.-Au.
N. Test. Greek. iv, 12, Jul.-S., and O.-D.
[Hist. of Apostolic Age. iv, 12, Jul.-S.]
Text. Criticism of N. Test. iv, 12, O.-D.
Paul's Corinthian Epistles. iv, 12, O.-D.
[Jewish and Patristic Greek. iv, 12, Ja.-Mar.]
Teaching of Jesus. iv, 12, Jul.-S.
Rapid Trans. and Interp. of Paul's Epistles. iv, 12, Ap.-Jun.
Gen. Survey of N. Test. Lit. iv, 12, O.-D.
The Miracles of Jesus. ii, 6, Au.-S.
The Book of Acts. iv, 12, Ap.-Jun.
Rapid Reading in the Septuagint. iv, 12, O.-D.
Jewish Lit. of N. Test. Times. iv, 12, Ap.-Jun.
- R. F. HARPER, Assoc. Prof. of Semitic Langs. and Lits.
A.B., Old Univ. of Chicago, '83; Ph.D., Leipzig, '86; Instr. in Semitic, Yale, '87-8, and '89-'91; Assyriologist to the Expedition of the Babylonian Explora. Fund, '88-9.
Assyrian Lang. iv, 12, O.-D.
Syrian Hist. Inscript. iv, 12 Jul.-S., also O.-D.
[Deuteronomy. Hebr. Syntax. iv, 12, Jul.-S.]
Hebr. Sight Reading. iv, 6, Jul.-Au., and iv, 6, Au.-S.
Babyl. Hist. Inscript. iv, 12, O.-D.
Babyl. Contracts. iv, 12, Ap.-Jun.
Assyrian Letters. iv, 12, Jul.-S.
[Mesopotamian Geog. iv, 6.]
[Assyr. and Babyl. Life. iv, 6.]
Beg. Syriac. iv, 12, Jul.-S., and O.-D.
Adv. Syriac. iv, 12, Ja.-Mar.
- Early Assyrian Htst. Inscript. iv, Jul.-S.
Later Assyrian Hist. Inscript. iv, 12, Ap.-Jun.
Selected Assyrian Hist. Inscript. iv, 12, O.-D.
Assyrian Syllabaries and Mythol. Inscript. iv, 12, Jan.-Mar.
[Babyl. Psalms and Addresses. iv, 12.]
Bilingual Babyl. Psalm. Lit. iv, 12, O.-D.
Mesopot. Geog. iv, 6, Ap.-My.
Assyr. and Babyl. Life. iv, 6, My.-Jun.
Babyl. and Assyr. Lit. in Eng. iv, 120, D.
- CASPAR, RENÉ GREGORY, Prof. of Theol., Leipzig.
A.B., Pennsylvania, '64; Instructor in Latin and Greek same, '64-6; Student Leipzig, '73-6; Ph.D., same, '76; Privatdocent same, '84; Professor Extraordinarius same, '93; Professor Ordinarius same, '93; LL.D., Pennsylvania, '94.
Greek Palæography. iv, 6, Au.-S.
Documents and Criticism of the N. Test. Text. iv, 6, Au.-S.
- J. H. BREASTED, Asst. Prof. of Egyptology and Semitic Langs.; Asst. Dir. of Haskell Museum.
A.B., Northwestern, '88; A.M., Yale, '92; non. res. Fellow, Chicago, '92-4; A.M. and Ph.D., Berlin, '94; Asst. in Egyptology, Chicago, '94-6.
Hist. of Egypt. v, 6, Jul.-Au.
Arabic. iv, 12, Jul.-S.
Hist. Hebr. iv, 12, Ja.-Mar.
Arabic Hist. Reading. iv, 12, Ja.-Mar.
Egyptian Archæol. iv, 6 Au.-S.
Hebrew Language. viii, 12, Jul.-S.
[Hist. Hebr. iv, 6, Au.-S.]
Arabian Nights. iv, 6, Au.-S.
[Life of Muhammed. iv, 12, Ap.-Jun.]
Arabic Geog. iv, 12, Ap.-Jun.
[Arabic Prose. iv, Jul.-S.]
[Sinbad, the Sailor. iv, 12, Ja.-Mar.]
[Arabic Composit. iv, 12, Jul.-S.]
[Arabic Poetry. iv, 12, Ap.-Jun.]
Beg. Hieroglyphic. iv, 12, Jul.-S.
Trans. of Egypt. Texts. iv, 12, Ja.-Mar.

Late Egyptian. iv, 12, Ap.-Jun.
[Hieratic Egyptian. iv, 12, Ja.-Mar.]
[Egyt. Texts of Græco-Roman Period.
iv, 12.]

Coptic. iv, 24, Ja.-Jun.

Arabic Geog. Hist. and Commentary.
iv, 6, Au.-S.

Hieroglyphic Texts. iv, 12, Ap.-Jun.
Egyptian Life and Antiquities. iv, 12,
Ap.-Jun.

C. E. CRANDALL, Univ. Extens. Instr. in
Semitic Langs.

A.B., Milton Col., '79, and A.M., '85; D.B.,
Bapt. Union Theol. Sem., '85; Asst. in Semitic,
Yale, '89-'91; Ph.D., same '91.

Hebr. Lang. viii, 12, Jul.-S.

Hist. Hebr. Samuel. iv, 12, O.-D.,
and iv, 12, Ja.-Mar.

Hebrew Sight Reading. Deuteronomy.
iv, 12, O.-D.

Targum. iv, 6, F.-Mar.

Biblical Aramaic. iv, 6, Ja.-F.

Bk. of Kings. iv, 12, Ap.-Jun.

Hebrew Sight Reading. Jeremiah and
Ezekiel. iv, 12, Ja.-Mar.

Adv. Hebr. Gram. Etymol. iv, 6, My.-
Jun.

Adv. Hebr. Gram. Syntax. iv, 6, My.-
Jun.

Bk. of Judges. iv, 12, O.-D.

Bk. of Chronicles. iv, 12, N.-D.

Deuteronomy. iv, 6, Ja.-F.

Jeremiah. iv, 6, F.-Mar.

H. S. WILLET, Asst. in Sem. Langs. and
Lits. and Dean of the Disciples' House.

A.B., Bethany Col., '86, and A.M., '87; non-res.
Prof. of Hebr. and O. T. Lit., Bethany Col.,
'92-'3; Instr., Bible Chair, Ann Arbor, Mich.,
'93-'5; Ph.D., Chicago, '96.

Hist. Hebr. iv, 6, Au.-S.

[Samaritan. iv, 12, Ja.-Mar.]

[Phœnician. iv, 12, Ja.-Mar.]

Hebr. Sight Reading. iv, 12, Jul.-S.

Outline Hebr. Hist. iv, 12, Ap.-Jun.

COLUMBIA.

13 Graduate Students, 1897-8.

[Courses marked B are open to Barnard Students.]

Courses in Semitic at the Union Theological Sem-
inary are open to students of Columbia, and
count as work for A.M. and Ph.D. The
university and seminary libraries contain most

of the periodicals which deal with Oriental
research, and are esp. rich in works of Rabbin-
ical Hebrew, Hebr. and Arabic MSS., Baby-
lonian tablets.

R. J. H. GOTTHEIL, Prof. of Rabbin. Lit.
and Sem. Langs.

A.B., Columbia, '81; Ph.D., Leipzig, '86.

B)*Bibl. Hebr. (el). ii, 30.

B)*Bibl. Hebr. (adv). ii, 16, O.-F.

B)*Bibl. Hebr. (crit.). ii, 14, F.-My.

B)*Rabbin. Hebr. Post-Biblical Poetry.
ii, 16, O.-F.

B)Rabbin. Hebr. Philosophy. ii, 14,
F.-My.

B)Rabbin. Hebr. Post-Talmudic Lit. i,
14, F.-My.

B)Semitic Epigraphy. Aramaean In-
scriptions. i, 30.

B)[Aramaean Inscripts. i, 30.]

B)[Sabæan and Himyaritic Inscripts.
i, 30.]

B)Assyrian (el). ii, 30.

B)[Assyrian (adv). ii, 30.]

B)Arabic (1st course). ii, 16, O.-F.

B)Arabic (2d course). ii, 14, F.-My.

B)Arabic (adv). ii, 30.

B)Syriac. ii, 30.

B)Syriac (adv). ii, 30.

B)Ethiopic. i, 16, O.-F.

B)Seminar. Methods of Linguistic Re-
search. ii, 30.

B)Intro. to Science of Language. ii, 30.
(With Prof. Jackson.)

JAMES C. EGBERT, Jr. [see 2].

B)Septuagint and Vulgate. Job. i, 14,
F.-My.

CLARENCE H. YOUNG [see 2].

B)*Gk. Test., Gospels and Acts. ii, 16,
O.-F. Epistles, F.-My.

CORNELL.

2 Graduate Students, 1897-8.

NATHANIEL SCHMIDT, Prof. of Semitic
Langs. and Lits.

A.M., Colgate, '87; Prof. Semitic Langs. and
Lits., same, '88-'96.

*Hebrew. ii, 32.

Arabic. ii, 32.

Aramaic (Biblical, Targumic, Edessene,
Samaritan). ii, 32.

Cornell—continued

- Egyptian. ii, 32.
 Semitic Seminar. Job, Pirqe, Aboth. ii, 32.
 *Semitic Literature: Pentateuch, Canticles, Enoch. ii, 32.
 *Geography and Antiquities of the Semites. ii, 32.
 *Oriental History: Egypt, India, The Spanish Califate. ii, 32.

HARVARD.

4 Graduate Students, 1897-8.

[Courses marked R are open to Radcliffe Graduate Students.]

Special Semitic Library. Semitic Museum contains large collection of monuments, tablets, seals, coins, and photographs, providing means of original research. Semitic Conference meets twice a month; essays and discussions on names of Semitic deities.

C. H. Toy, Prof. of Hebrew and Oriental Langs.

A.M., Virginia, '56; Prof. So. Bap. Theol. Sem., '69-'79.

*Hist. of Pre-Christian Hebrew Lit. iv, 15, O.-Ja.

*Hist. of Hebr. Relig., compared with other Semitic Relig. ii, 30.

[Hist. of Bagdad Califate. Moham-
 medianism in India. Lects. on Lit.
 The Koran. i, 30.]

*Hist. of Spanish Califate. The Koran. i, 30.

R) Hebrew (adv). ii, 30.

R) [Ethiopic. ii, 30.]

R) General Semitic Gram. Research.

R) Arabic (el). ii, 30.

R) Arabic (adv). ii, 30.

R) The Talmud. Rosh ha-Shanah. i, 30.

R) Phœnician. i, 30.

D. G. LYON, Prof. of Divinity.

Ph.D., Leipzig, '82.

*Hebrew (el). iii, 30.

*Babylonian-Assyrian Hist. i, 30.

*Hist. of Israel. iii, 30.

R) Assyrian (adv). ii, 30.

R) Assyrian (el). ii, 30.

R) Assyrian Gram. Research.

R) Classical Aramaic (Syriac). ii, 15,
 O.-Ja.

R) Jewish Aramaic. ii, 15, F.-June.

Semitic Conference subject for 1898-9:
 Recent Explorations and Discoveries
 in Semitic Lands.

JOHNS HOPKINS.

18 Graduate Students, 1897-8.

Dillmann Library of 2,318 vols. and 2,222 pamphlets. Rich in Biblical Lit. and Ethiopic.

PAUL HAUPT, Prof. of Semitic Langs.

Ph.D., Leipzig, '78; Privatdoc., Göttingen, '80;
 Prof. of Assyriology in the same, '83; Hon.
 Curator of Coll. Oriental Antiq. in U. S. Nat.
 Mus.

Interp. of selected chapters of the Au-
 thorized Version. i, 30.

Hebrew (el). ii, 30.

Hebrew (2d yr.). Interp. of Bk. of
 Genesis. i, 30.

Hebrew Prose Composition. i, 30.

Comp. Hebrew Grammar. i, 30.

Hebrew (adv). Crit. Interp. of Bk. of
 Job. i, 15.

Ethiopic (Dillmann's Chrestomathy)
 i, 30.

Arabic Prose Composition. i, 30.

Sumerian (adv). i, 30.

C. JOHNSTON, Assoc. in Semitic Lags.

Ph.D., Johns Hopkins, '94.

Hist. of Egypt. i, 15, O.-F.

Hebrew at Sight. i, 30.

Syriac (Roediger's Chrestomathy). i,
 30.

Arabic for beginners. i, 30.

The Coran. i, 30.

Assyrian for beginners. ii, 30.

Assyrian Letters. ii, 30.

MR. ROSENAU, Instr. in Semitic Langs.

A.B., Univ. of Cincinnati, '88.

Post-Biblical Hebrew (selected Mish-
 nic and Talmudic texts). i, 30.

MICHIGAN.

1 Graduate Student, 1897-8.

J. A. CRAIG, Prof. of Semitic and Hellen-
 istic Greek.

A.B., McGill Univ., '80, and A.M., '81; D.B.,
 Yale, '83; Ph.D., Leipzig, '86; Instr. and Adj.
 Prof. of Semitic Langs. & New Test. Greek,
 Lane Sem., '86-'91.

Hebrew. Historical Bks. iii, 34.
 Hebrew. Prophetic Bks. ii, 34.
 Hebrew. Hagiography. iii, 34.
 Assyrian. Selections. iii, 34.
 Sumerian. Sem. and lects. ii, 34.
 Arabic. Gram. and selections. ii, 34.
 Hist. Babylonia and Assyria, Israel-
 itish. Hist. and Prophecy in the light
 of the monuments. ii, 17, O.-F.
 Hellenistic Greek. Selections. iii, 34.
 Introduction to Study of Old Testa-
 ment. ii, 17, O.-F.

MINNESOTA.

4 Graduate Students, 1897-8.

J. R. JEWETT, Prof. Semitic Langs. and
 Hist.

A.B., Harvard, '84; Instr. Semitic Langs.,
 '87-8; Ph.D., Strassburg, '90; Assoc. Prof.
 Semitic Langs. and Lits., Brown.

*Hebrew Accidence. iv, 24, S.-F.

*Hebrew Syntax. iv, 12, Mar.-My.

Isaiah. ii, 12, Mar.-My.

*Aramaic. iv, 12, Mar.-My.

Arabic. iv, 24, D.-My.

*Assyrian. iv, 12, S.-N.

*Oriental Hist. iv, 24, S.-F.

NEW YORK.

18 Graduate Students, 1897-8.

Oriental Lib. of 5,500 vols. collected by the late
 Prof. De La Garde, of Göttingen, including his
 unpublished notes. Also a library presented by
 the Sultan of Turkey to the Hon. Abram S.
 Hewitt and by him to the University. Assyrio-
 logical collection comprises some newly discov-
 ered tablets and cylinders.

JOHN DYNELEY PRINCE, Prof. of Semitic
 Langs. and Dean of Graduate School.

A.B. Columbia, '88; Ph.D., Johns Hopkins, '92.

Arabic (adv). Studies in Poetry. ii,
 30.

*Assyrian (el). ii, 30.

Assyrian Bilingual Texts. ii, 30.

Hebrew (2d course). Crit. study of O.
 Test. i, 30.

Hebrew Studies in Job. ii, 30.

Syriac (adv). ii, 30.

GEORGE W. OSBORN, Instr. in Semitic.

A.B., N. Y. U., '95, and M.A., '97.

*Arabic (el). ii, 30.

The Koran. ii, 30.

*Biblical Aramaic. ii, 30.

Aramaic. Selections from Targums.
 ii, 30.

Hebrew (2d course). Narrative selec-
 tions. i, 30.

Ethiopic (el). ii, 30.

NORTHWESTERN.

2 Graduate Students, 1897-8.

CHARLES HORSWELL, Prof. of Hebrew.

A.B., Northwestern, '84, and A.M., '87; D.B.,
 Garrett Bibl. Inst., '87; Ph.D., Yale, '91; Instr.
 in Greek, Garrett Bibl. Inst., '84-7; in Greek
 and Hebrew, '87-91; Asst. Prof. of Hebrew,
 '91-4.

*Elements of Hebrew. iii, 32.

Historical Books. iii, 32.

PENNSYLVANIA.

12 Graduate Students, 1897-8.

Babylonian Collection ranks immediately after
 British Museum and Louvre. 30,000 cuneiform
 documents in clay, several hundred inscribed
 vases and bowls, 700 fragments of vases and
 votive tablets, 600 seal cylinders, 10 sarcophagi,
 large number of weights, weapons, gold and
 silver objects. Library Semitic Philol. and Lit.,
 3,000 vols., and 20 vols. MSS. 1 Fel. \$500
 + tui.

HERMANN V. HILPRECHT, Prof. of Assy-
 rian and Comp. Semit. Philol.; Curator
 Babylonian Museum.

Ph.D., Leipzig, '83; Prof. Class. Langs.
 "Fridericianum," Davos, Switzerland, '84-5;
 Reptent. Theol. Fac., Erlangen, '85-6; Prof.
 O. Test. Langs. and Theol., Mt. Airy Sem.,
 Philad'a, '91-2; D.D., Univ. of Pa., '94;
 LL.D., Princeton, '96.

Semitic Sem. (Verb formation in Assy-
 rian, Hebr., Syr.) i, 15, F.-My.

Assyrian Grammar. ii, 30.

Interp. of Assyrian Historical and Baby-
 lonian B'ldg. Inscriptions. ii, 15, O.-F.

Neo-Babylonian Contract Tablets from
 Nippur. i, 15, F.-My.

Assyrian Sem. (Course in Palæog-
 raphy.) i, 15, O.-F.

Sumerian Grammar. i, 15, F.-My.

Interp. of Isaiah, Chapters I-X. i,
 15, O.-F.

Syriac Grammar. i, 15, F.-My.

Pennsylvania — continued

MORRIS JASTROW, JR., Prof. of Semitic Langs. and Asst. Libr.

A.B., Univ. of Pa., '81, and A.M., '83; Ph.D., Leipzig, '84; Lecturer in Semitic Langs., '85-6.

Intro. to Study of Sem. Languages. i, 15, O.-F.

Interp. of Book of Proverbs. i, 30.

The Book of Leviticus. i, 30.

Hebrew Sight Reading. i, 30.

Hebrew Grammar. Lects. i, 15, O.-F.

Rabbinical Literature. i, 30.

The Mishnaic Treatises Pirkê Abôth, Taanith and Shabbâth. i, 30.

Aramaic Grammar. i, 30.

Arabic Grammar. ii, 30.

Brünnow's Arabic Chrestomathy. i, 30.

El-Bokhâri. i, 15, O.-F.

Selections from Annals of Tabârî. i, 15, F.-My.

Semitic Epigraphy. i, 15, O.-F.

South Arabic Inscripts. i, 15, F.-My.

PRINCETON.

1 Graduate Student, 1897-8.

Courses in Assyrian, Arabic, Syriac, Ethiopic, given in the theological seminary by Dr. Davis, Dr. Vos, and Prof. Martin, are open to Graduates. Library of the seminary contains several thousand volumes on Sem. Langs. and Lits.

CHALMERS MARTIN, Instr. in Hebrew.

A.B., Princeton, '79, and A.M., '82; Asst. Prof. in O. Test. Dept., Princeton Theol. Sem.

*Hebrew Gram. and O. Test. Readings. iv, 36.

Hebrew (adv). Poetical and Prophetical Books of O. Test. ii, 18, S.-Ja.

Syriac. ii, 18, F.-My.

RADCLIFF.

0 Graduate Students, 1897-8.

(See Harvard courses marked R.)

C. H. TOY.

*Hist. of Pre-Christian Hebrew Lit. ii, 15, F.-Jun.

D. G. LYON.

*Hebrew (el). iii, 30.

*His Israel. ii-iii, 30.

VANDERBILT.

Graduate Students, 1897-8.

J. H. STEVENSON, Prof. of Semitic.

A.B., McGill Univ., '89; D.B., Wesleyan Theol. College, '90; Ph.D., Chicago, '97.

*Hebrew (el). iii, 32.

*Hebrew (adv). iii, 32.

Aramaic (el). Readings from Targums. iii, 8, F.-Mar.

Arabic (el). ~~Nallino's~~ Chrestomathy and Koran. iii, 32.

Assyrian (el). Historic Inscriptions. iii, 32.

[Syriac (el). Readings in Gospels. i, 32.]

[Syriac (adv). i, 32.]

[Arabic (adv). Brünnow's Chrestomathy, Koran and Lectures. i, 32.]

Assyrian (adv). Comp. with Hebrew, Archæol., Lects., Gram. and Selections. i, 32.

GROSS, ALEXANDER, Prof. of New Testament Exegesis.

D.B., Drew Sem., '77; S.T.D., Emory & Henry, '90.

Portions of the Fathers. iii, 32.

WISCONSIN.

4 Graduate Students, 1897-8.

W. H. WILLIAMS, Prof. of Hebrew and Hellenistic Greek.

*Genesis and Hebrew Gram. iv, 36.

*Psalms and Job. ii, 36.

Hebrew Seminary. Isalah. i, 36.

*Hist. of Israel. i, 36.

*Pauline Epistles. ii, 36.

F. T. KELLY, Instr. in Hebrew and Hellenistic Greek.

*Hist. Hebrew. iii, 36.

*Exercises in writing Hebrew. i, 36.

Arabic (el). ii, 36.

Arabic (adv). The Quran. ii, 36.

YALE.

29 Graduate Students, 1897-8.

E. L. CURTIS, Prof. of Hebrew.

A.B., Yale, '74; Ph.D., Hanover, Indiana, '86; D.D., Yale, '91.

- Hebrew (el). v, 32.
 Readings in Unpointed Texts. i, 32.
 Ancient Traditions and Hist. of the Jewish People. i, 32.
 Book of Job. i, 32.
 [The Five Megilloth. i, 32.]
 Selections from Psalter. ii, 12, O.-D.
 Book of Isaiah. i, 20, Ja.-Jun.
 Anal. and Expos. of Isaiah, Jeremiah, Ezekiel (Eng.). ii, 20, Ja.-Jun.
 Old Test. Intro. i, 32.
- F. K. SANDERS**, Prof. of Bibl. Lit.
 A.B., Ripon, '82, and A.M., '88; Ph.D., Yale, '89; Vice-Prin. Am. Inst. Sacred Lit., '91-pr.
 Hebrew Poetical Lit. i, 32.
 Hebrew Syntax. i, 32.
 Text. Crit. of O. Test. i, 32.
 Arabic Poetical and Philos. Lit. ii, 32.
 Bib. Lit. (Pre-exilic). ii, 32.
 Bib. Lit. (Post-exilic). ii, 32.
 Eng. Bible Sem. ii, 32.
 (With H. W. Dunning.)
 Semitic Sem. i, 32.
- F. C. PORTER**, Prof. of Bibl. Theol.
 A.B., Beloit, '80; A.M. and Ph.D., '89.
 Bibl. Theol. of Old Test. ii, 32.
 Bibl. Theol. of New Test. iii, 32.
 [Hellenistic Jewish Lit. i, 32.]
 Palestinian Jewish Lit. i, 32.
 Sources of Teaching of Jesus. ii, 32.
- BENJ. W. BACON**.
 A.B., Yale, '81, B.D., '84, and A.M., '92; D.D., Western Res., '93; Lit.D., Syracuse, '95.
- Hist. of New Test. Lit. ii, 32.
 Teachings of Jesus. iii, 32.
 Proleg. to N. Test. i, 32.
 Pauline Epistles. iii, 12, O.-D.
 Gospel of Mark. iii, 20, Ja.-Jun.
- HARLAN CREELMAN**, Instr. in Bibl. Lit.
 B.D., Yale, '90; Ph.D., same, '94.
 Hebrew (el). ii, 32.
 Book of Ezekiel. i, 32.
 Begin. Arabic. ii, 32.
 Begin. Assyrian. ii, 32.
 Assy. and Babylonian Inscriptions. ii, 16, O.-Ja.
 Assyro-Babylonian Hist. and Lit. ii, 16, F.-Jun.
 Messianic Prophecy (Eng.). i, 32.
 [Minor Prophets (Eng.). i, 32.]
 Studies in Gospels (Eng.). i, 32.
 [Pauline Epistles (Eng.). i, 32.]
- H. W. DUNNING**, Instr. in Sem. Langs. and Lits.
 A.B., Yale, '94; Ph.D., '97.
 Hebrew (adv). ii, 32.
 Sight Reading in Hebr. i, 32.
 The Qur'ân. ii, F.-Jun.
 Arabic Prose Lit. ii, O.-F.
 Biblical Aramaic. ii, O.-F.
 Syriac and Text. Crit. of New Test. ii, F.-Jun.
 Ethiopic. ii, O.-D.
 Comp. Semitic Gram. ii, Ja.-Jun.
 Bib. Geog. and Archæol. i, 32.
 [O. Test. Wisdom-Lit. (Eng.). i, 32.]

2. CLASSICAL LANGUAGES AND LITERATURES.

[For Biblical and Patristic Greek and Latin, see i. For Classical Archæology, see 11.]

BARNARD.

11 Graduate Students, 1897-8.
 [See Columbia Courses marked B.]

BROWN.

11 Graduate Students, 1897-8.

J. S. MANATT, Prof. of Gk. Lit. and Hist.

A.B., Iowa Col., '69; Ph.D., Yale, '73; LL.D., Iowa, '87; Prof., Denison Univ., '74-6; Prof. of Gk., Marietta Col., '78-'84; Chanc., Univ. Nebraska '84-9.

*[Aristophanes and the Greek Stage. iii, 33.]

[Theocritus. Sem. ii, Fortnightly.]
 Thucydides, Aristophanes, Pansanias, and Inscriptions. ii, S.-Mar.

Greek Seminar. Homeric Hymns and Hesiod. ii, 33.

FRANCIS G. ALLINSON, Assoc. Prof. of Gk. and of Class. Philol.

A.B., Haverford, '76, and Harvard, and A.M., '79; Ph.D., Johns Hopkins, '80; Fel. in Gk., Johns Hopkins, '77-'80; Asst. Prof. Gk. and

Brown — continued

Lat., Haverford, '80-2; Asst. Prof. Anc. Langs., Williams, '92-5.

Lucian. ii, 10, Ja.-Mar.

A. G. HARKNESS, Prof. of Roman Lit. and History.

A.B., Brown, and A.M., '82; Prof. Lat. and Ger., Colgate, '83-9; Assoc. Prof. Lat., Brown, '89-93.

*Pliny the Younger. i, 33.

Epigraphy. ii, 33.

[Palæog. and Text. Criticism. ii, 33.]

[Numismatics. i, 33.]

Sem. in Roman Hist. i, 33.

*[Prose of Repub. Devel. of Oratory. iii, 12, S.-D.]

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HENRY RUSHTON FAIRCLOUGH, Prof. of
Classical Lit.

A.B., Univ. of Toronto, '83, and A.M., '86;
Fel. in Classics, Univ. Col., Toronto, '83-4;
Graduate Scholar, Johns Hopkins, '86-7, and
Fellow, '87; Ph.D., same, '96; Lect. in Greek
and Anc. Hist., Univ. Col., Toronto, '93;
Classical Examiner in Univ. of Toronto and
Trinity Univ.

*[Quintilian. ii, 17, Ja.-My.]

Lyric Poetry (Greek and Latin). ii,
15, S.-D.

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Reports on Current Lit. in Lat. Philol., 1 hr.
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Lit.

A.B., Mich., '62; Ph.D., Leipzig, '73; Director
of Am. School of Classical Studies at Athens,
'86-7; LL.D., Mich., '91.

Teachers' Course. Lects. on Sounds
and Inflections of Gk. Lang. ii, 17,
O.-F.

Sem. in Trag. Orestia of Æschylus.
Text. Crit. and Dram. Art. of Æschy-
lus. iii, 17, O.-F.

Hist. of Greek Art from the beginning
to the Roman Period. iii, 17, O.-F.

Int. to Gk. Epigraphy and Practice in
Reading Inscriptions. ii, 17, O.-F.

Studies in Plato's Rep. ii, 17, F.-Jun.

Pindar. The Olympian and Pythian
Odes. ii, 17, F.-Jun.

Greek Antiq. Lects. on Private Life of Ancient Athenians. i, 17, F.-Jun.
 Modern Greeks. Selections from Writers of Modern Prose and Poetry. ii, 17, F.-Jun.

A. H. PATTENGILL, Prof. of Greek.

A.B., Mich., '68; A.M., same, '71.

Thucydides. Books VII, VIII. 17, O.-F.
 The Bucolic Poets. iii, 17, F.-Jun.

W. H. WAIT, Instr. in Greek and Sanskrit.

A.B., Northwestern, '79, and A.M., '82; Ph.D., Allegheny Col., '88; Prof. Lat. and Ger., Illinois Wesleyan, '83-7; Acting Pres., same, '87-8; Prof. Lat. and Mod. Langs., same, '88-'90.

Greek Prose Writing. Teachers' Course. ii, 17, F.-Jun.

FRANCIS W. KELSEY, Prof. of Latin Lang. and Lit.

A.B., Rochester, '80; Ph.D., same; Prof. of Latin, Lake Forest.

Sem. in Roman Satire. ii, 34.

*Caesar and Virgil. iii, 34.

[Roman Archæology iv, 17, F.-Jun.]

*Introduction to Classical Philology. iii, 17, F.-Jun.

JOHN C. ROLFE, Prof. of Latin.

A.B., Harv., '81; A.M., Cornell, '84; Ph.D., same, '85; Instr. in Gk. and Lat., Harv., '89-'90; Asst. Prof. of Lat., Mich., '90-2; Acting Prof. Lat. Lang. and Lit., '92-3; Junior Prof. Lat., Mich., '93-4.

[Lat. Gram. lects. ii, 17, O.-F.]

[Lat. Gram. Study of assigned topics. ii, 17, F.-Jun.]

Italic Dialects (lects. and interp. of selected inscripts.). iii, 17, F.-Jun.

Advanced Latin Writing. ii, 17, O.-F; also F.-Jun.

Cicero's Letters. iii, 17, O.-F.

*Letters of Pliny. iii, 17, O.-F.

JOSEPH H. DRAKE, Asst. Prof. of Latin.

A.B., Mich., '85.

*Roman Political Antiquities. ii, 17, O.-F.

Historical Pro-seminary. Septimius Severus. iii, 17, F.-Jun.

Annals of Tacitus, selections. iii, 17, O.-F.

*Roman Law. iii, 17, F.-Jun.

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A.B., Mich., '93; A.M., '94; Ph.D., '97; Jones Fellow, Univ. of Mich., '93-5; Fellow, Am. Sch. at Rome, '95-7.

Latin Inscriptions. iii, 17, F.-Jun.

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A.B., Wesleyan, '50, A.M., '53; D.D., Lawrence Univ., '65; Prof. of Greek and Mathematics, Lawrence; Pres. of Hamline Univ., '60-9.

Greek Poetry. i, 36.

Greek Oratory. i, 36.

Epigraphy. i, 36.

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Development of Greek Oratory. ii, 36.

[Comparative Study of Greek Historians. ii, 36.]

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A.B., Univ. of Minn., '76; Instr. in Latin and Math., '76-'80; Asst. Prof. of Latin, '80-3.

Roman Phil. Lucretius, Cicero, etc. ii, 36.

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Roman Law. Institutes and Digests, ii, 36.

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A.B., Univ. of Minn., '90; A.M., '92; Scholar in Greek and Latin, '92 and '93; Instr. in Latin, '94-6.

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A.B., Univ. of Mich., '90, A.M., '94; Ph.D., Munich, '97.

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Seminary. iii, 36.

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Latin Palæography. ii, 36.

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L.H.D., Princeton, '96.
Plato, Republic and Laws, Phædo and
Protagoras. ii, 30.
Aristotle, Politics. ii, 30.
Polybius. ii, 30.
Thucydides. ii, 30.
Modern Greek. ii, 30.

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and Lit.
Fel. in Greek, Johns Hopkins, '76-9, and
Ph.D., '78.
Schæfer's Quellenkunde and Peter's
Fragmenta Historicorum Roma-
norum. ii, 27.
Quintilian and Rutilius. Ernesti and
Volkman, with hist. of Ancient
Rhetoric. ii, 30.
Lucretius. ii, 30.
Polit. and Lit. Biography of Cicero.
ii, 27.
Hist. of Roman Lit. ii, 30.
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Latin Style.

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African Writers, with selects. from
Gellius, Fronto, and Apuleius. ii,
30.

Cena Trimalchionis of Petronius. ii,
30.
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30.

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Greek Poetry. iii, 36.
*[Demosthenes and Plato. ii, 24.]
*[Greek Life. ii, 18.
*Greek Art. ii, 36.
[Greek Religion. i, 18.]
Greek Political Institutions. i, 18.

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*Reign of Tiberius. Tacitus, comp. of
other authorities. iii, 24.
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18.
Horace, Literary Epistles, Quintilian.
ii, 18.
*[Schools of Philos. Lucretius. iii, 14.
Cicero, Seneca. iii, 22.
*Persius. iii, 12.
Teachers' Class. i, 22.

OMERA F. LONG, Instr. in Latin.
Ph.D., Johns Hopkins, '88, Fel. in Latin, '96.
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Roman Law Text-book and Lectures.
ii, 18.
Roman Political Institutions. i, 18.

JOHN A. SCOTT, Instr. in Greek.
A.B., Northwestern, '91; Hopkins Scholar,
Johns Hopkins, '94-5, and Classical Fel., '95-6;
Ph.D., '97.
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Hist. of Latin Lang. Lects. i, 30.
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Cicero's Orator. Lects. i, 15, F.-My.
Journal Club. Monthly.

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Selections from Tertullian, Lactantius, and Augustine. i, 36.

*Lucretius, de Rerum Nat.; Cicero de Nat. Deorum, etc. ii, 36.

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*Roman Oratory. ii, 18, S.-Ja.

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Vanderbilt — continued

'81-2; Prof. Greek, same, '82-3; Ph.D., Leipzig, '85; LL.D., Univ. N. Car., '94.

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Ph.D., Johns Hopkins, '94.

Hist. Roman Satire. i, 32.

Seminary, Horace. ii, 32,

[Hist. Lat. Gram. i, 32.]

[Early Latin Inscriptions. ii, 32.]

*Roman Literature and Composition. ii, 32.

*Tacitus, Juvenal, Plautus, Terence. ii, 32.

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Ph.D., Yale, '90; Asst. Indo-Europ. Languages, same, '91; Asst. Prof. Sanskrit, Wis., '92-3; Prof. Sanskrit, Univ. N. Car., '94.

Seminary. Greek Dialect Inscriptions. ii, 32.

Pindar and Bacchylides. i, 16, O.-Ja.

Plato. i, 16, F.-My.

[Seminary. Greek Lyric Poets. ii, 32.]

[Homer. i, 16, O.-Ja.]

[Greek Historians. i, 16, F.-My.]

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*Hist. of Greek Poetry. iii, 35.

ANNIE S. MONTAGUE, Assoc. Prof. Greek.

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*Plato, Phædo, and the Republic. iii, 35.

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KATHARINE M. EDWARDS, Assoc. Prof. of Greek.

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ADELINE B. HAWES, Assoc. Prof. of Latin.

A.B., Oberlin,

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*History and Literature of the First Century A. D. Selections from the Historians and other Authors of this Period. iii, 35.

*Lyric, Idyllic, and Elegiac Poetry. iii, 35.

*History of Latin Literature. i, 35.

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A.B., Dartmouth, '85; Ph.D., Erlangen, '88; Instr. in Latin and French, Adelbert, '89-'90; Prof. of Greek, College for Women, W.R.U., '90-3.

Encyclopædia and Methodology of Classic Philol. iii, 17, F.-Jun.

*Idyllic Poetry. ii, 16, S.-Ja.

*Athenian Drama. iii, 16, S.-Ja.

Greek Antiquities. iii, 17, F.-Jun.

*Greek Philosophy. iii, 16, S.-Ja.

*Gk. Prose Composi. i, 16, S.-Ja.

Greek Oratory. iii, 17, F.-Jun.

H. N. FOWLER, Prof. of Greek.

A.B., Harvard, '80; Ph.D., Bonn, '85; Instr. in Greek, Latin and Archæol., Harvard, '85-8; Prof. of Greek, Univ. of Texas, '92-3; Prof. of Greek, College for Women, W.R.U., '93.

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Plato's Republic and Aristotle's Politics. iii, 16, S.-Ja.

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A.B., Vassar, '79; Assoc. Prof. of Latin, Col. for Women, W.R.U., '92; Prof. of Latin, same, '93.

Roman Satire. iii, 36.

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Latin Prose Composi. iii, 17, F.-Jun.

*Cicero, Brutus, Tacitus. iii, 17, F.-Jun.

VERNON JUDSON EMERY, Instr. in Latin

A.B., Ohio State Univ., '87; Instr. in Latin, Univ. of Neb., '88-'91; A.M., Univ. of Neb., '90; Univ. of Berlin, '91-2; Asst. in Latin, Ohio State Univ., '92-3; Asst. in Lat., Univ. of Chicago, '93-4; Instr. in Lat., Adelbert Coll., '94.

*The Roman Annalists and Early Roman History. iii, 16, S.-Ja.

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[Greek Lyric Poets. Seminary. ii, 36.]

Thucydides. Seminary. ii, 36.

Greek Antiquities, State and Private. i, 36.

[Greek Drama and Scenic Antiquities. ii, 36.]

*Greek Dramatic Poets. iii, 36.

*Advanced Greek Composition. i, 18, F.-Jun.

Journal Club. i, 36. (With other classical professors.)

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A.B., Dalhousie, '89; Ph.D., Cornell, '91; Instr. in Gk., Stanford, '91-2; Instr. in Gk., Cornell, '92-4.

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A.B., De Pauw, '83; Ph.D., Johns Hopkins, '91; Instr. in Lat., Bryn Mawr, '87-8; Prof. of Latin, Iowa College, '89-'96.

Lucretius. Seminary. ii, 36.

[Horace Odes. Seminary. ii, 36.]

[Roman Drama. Seminary. ii, 36.]

*[Lucretius and Virgil. iii, 36.]

*Early Roman Poetry. iii, 18.

Lectures on Roman Literature. iii, 18.

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A.B., Mich., '86; Instr. in Gk., Mich., '91-2; Instr. in Latin, same, '92-3.

*Topography and Remains of Ancient Rome. ii, 18.

*Reading of Latin Inscriptions and Manuscripts. ii, 18.

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A.B., Yale, '69, and Ph.D., '73; LL.D., West. Res., '93; formerly Prof. Gk., Adelbert.

Thucydides, and Hist. Trad. of the Pentekontaetia. iii, 32.

[Pausanias. i, 32.]

T. D. SEYMOUR, Prof. of Greek.

A.B., Yale and West. Res., '79; LL.D., West. Res., '94; Prof. Gk., West. Res., '72-'80.

[Æschylus. iii, 32.]

[Plato. iii, 32.]

Epic Poetry. iii, 32.

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Sophocles. iii, 32.

[Greek Art. ii, 32.]

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[Aristotle's Poetics. Lit. Crit. in Anc. Times. i, 32.]

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*Euripides. ii, 32.

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Frogs of Aristophanes. ii, 32.

*[The Sicilian Invasion. ii, 32.]

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A.B., Yale, '93.

*Modern Greek. i, 32.

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A.B., Yale, '61, and A.M., '64; Prof. Latin, Cornell, '71-'80. [Absent '98-9 as Director of the American School of Classical Studies in Rome.]

[Horace (Satires) and Tacitus Dialogus). ii, 32.]

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[Plautus. ii, 32.]

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*Latin Elegy. ii, 32.

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[18th Century Prose Writers. ii, 30.]

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*[English Critics of Life. Burke, Carlyle, Ruskin. iii, 30.]

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*[19th Cent. Poets. ii, 30.]

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Eng. Comedy. iii, 32.

Special Research. —?

Probs. in Lit. Criticism. iii, 32.

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Special Research. —?

The Essay in Eng. Lit. ii, 32.

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Influence of Germany on Eng. Lit. of 18th and 19th Cents. ii, 32.

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*Old Eng. (adv). ii, 16, Au.-D.

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The English Drama before Shakespeare. iv, 12, Jul.-S.

Shakespeare. iv, 12, Jul.-S.

W. C. WILKINSON, Prof. of Poetry and Criticism.

A.B., Rochester, '57, and A.M., '63; Prof. of Mod. Langs., Rochester, '63-4; Prof. of Homiletics and Pastoral Theol., Rochester Theol. Sem., '72-'81; D.D., Univ. of Rochester, '73.

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Chicago — continued

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Ph.D., Univ. of Pa.; Univ. Extens. Lect.,
Eng. and Am., 74-pr.
- *[Lit. Criticism and Theory of Interp.
iv, 12, Ap.-Jun.]
- *[Ethics Underlying Shakespeare's
Plays. iv, 12, Ap.-Jun.]
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Lang.
A.B., Michigan, '68, and A.M., '71; Prof. of
Anc. Langs., Albion, '70-1; Instr. in Latin,
Michigan, '71-5; Ph.D., Leipzig, '92.
- *Old Eng. El. course; prose selections;
Béowulf. iv, 36, O.-Jun.
- *Early Mid. Eng. iv, 12, O.-D.
- *Later Mid. Eng. Langland, Wyclif,
etc. iv, 12, Ja.-Mar.
Comp. Gram. of Old Eng. Lects. and
special investigations. iv, 12, Ja.-
Mar.
Eng. Lang. Sem. Grammatical probs.
ii, 36, O.-Jun.
Old Eng. Special Reading. O.-Jun.
Mid. Eng. Special Reading. O.-Jun.
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special studies. iv, 12, Ap.-Jun.
Chaucer. Cant. Tales. iv, 12, Jul.-S.
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Eng. Lit.
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Wordsworth and the Eng. Romantic
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6, Jul.-Au.
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terp. of King Lear. iv, 12, Ja.-
Mar.]
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Movement. iv, 12, Ap.-Jun.]
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iv, 6, Au.-S.
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Ap.-Jun.
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Coleridge. iv, 6, Jul.-Au.
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iv, 6, Jul.-Au.
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24, O.-Mar.
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12, Ap.-Jun.
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Syracuse Univ., '92; Asst. in Rhet., Univ. of
Chic., '93-4; Ph.D. (in English), same, '94;
Asso. in Rhet., same, '94-5; Instr. in Engl.,
same, '95-6; Asso. Prof. of Engl., Lewis Insti-
tute, Chicago, '96.
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Eng., Ripon, '84-'93.
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ature. iv, 12, Ja.-Mar.
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- [Eng. Lit. of the 19th Cent. iv, 12, Ap.-Jun.]
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*Gen. View of French Lit. (conducted in Eng). iii, 30.

Italian Lit. of 13th and 14th Cents. Boccaccio, Petrarca, Dante. Early Italian. Monaci's Crestomazia italiana dei primi secoli. iii, 30.

Provençal Lang. and Lit., with selections from the Poetry of the Troubadours. ii, 30.

Low Latin. ii, 30.

Introduction to Linguistic Science. iii, 15, F.-Jun. (With Asst. Prof. von Jagemann.)

CHARLES E. NORTON [see 11].

Lit. and the Fine Arts in Italy during the Middle Ages, with special study of Dante. ii-iii, 30.

JEFFERSON B. FLETCHER [see 3].

*Lit. of 15th and 16th Cents. Torquato Tasso, Ariosto, Machiavelli, Benvenuto Cellini, Leopardi. iii, 30.

Hist. of the Pastoral. iii, 15, F.-Jun.

C. H. C. WRIGHT, Instr. in French.

A.B., Harv., '91.

The rise and growth of Classicism in French Lit. iii, 30.

I. BABBITT, Instr. in French.

A.B., Harv., '89; A.M., same, '93.

Literary Criticism in France during 19th Cent. i, 30.

JOHNS HOPKINS.

22 Graduate Students, 1897-8.

A. M. ELLIOTT, Prof. of Rom. Langs.

A.B., Haverford, '66; A.B., Harv., '68; Ph.D., Princeton, '77; A.M., Haverford, '78; LL.D., Wake Forest, '91.

Sem. Marie de France. MSS. ii, 30.

French Dialects. i, 30.

Romance Club. i, 30.

Lectures on Dante. i, 30.

C. C. MARDEN, Assoc. in Rom. Langs.

Ph.D., Johns Hopkins.

Old Span. Readings. i, 30.

Span. Philol. i, 30.

Span. Sem. i, 30.

Span. Epic Poetry. i, 15.

A. RAMBEAU, Assoc. Prof. of Rom. Lang.

A.B., Wittenberg, '71; Ph.D., Marburg, '77; Staats Examen, '79; Lect. Eng. Lit. and Hist. Gram., '78-9; Professor, '88; Assoc. in Rom. Langs., Johns Hopkins, '93.

French Phonetics. i, 30.

E. C. ARMSTRONG.

Ph.D., Johns Hopkins, '97.

Old French Philol. iii, 30.

French Phonetics. i, 30.

Old French Readings. ii, 30.

G. C. KEIDEL.

Ph.D., Johns Hopkins, '95.

Methodology of Rom. Langs. i, 30.

PHILIP OGDEN.

A.B. Cornell, '91; Ph.D., Johns Hopkins, '97.

Lects. on Criticism of Mod. French Lit. i, 30.

F. M. WARREN, Prof. of Rom. Langs. in Adelbert.

Ph.D., Johns Hopkins, '87.

Hist. of French Lit. iii, 15, O.-F.

LELAND STANFORD, JR.

4 Graduate Students, 1897-8.

JOHN E. MATZKE, Prof. of Rom. Langs.

A.B., Hope, '82; Ph.D., Johns Hopkins, '88; Prof. of French, Bowdoin, '89-'90; Prof. Rom. Langs., Indiana, '90-1; Assoc. in Rom. Langs., Johns Hopkins, '91-3.

Hist. of Old French Lit. ii, 15, S.-D.

French Hist. Grammar. iii, 32.

[Physiological Phonetics. ii, 15, S.-D.]

Old French Dialects. i, 32.

Old Provençal. ii, 15, S.-D.

Old Spanish. ii, 17, Ja.-My.

Hist. of the Spanish Theater. ii, 17, Ja.-My.

Seminary. Anglo-Norman Dialect. ii, 32.

F. J. A. DAVIDSON, Asst. Prof. of Rom. Langs.

A.B., Toronto, '90, and A.M., '93; Fellow and Instr., Toronto, '92-5.

Hist. of Fr. Versification. i, 32.

*Literary Movements of the 19th Century. ii, 32.

O. M. JOHNSTON, Asst. Prof. of Rom. Langs.

A.B., Miss. Col., '80, A.M., '92; Ph.D., Johns Hopkins, '96; Prof. of Eng. and Hist., Miss. Col., '91-3; Fellow, Johns Hopkins, '95-6; Lecturer in French Philol., Bryn Mawr, '96-7.

*Introduction to Old French. ii, 32.
French Hist. Syntax. i, 32.

MICHIGAN.

6 Graduate Students, 1897-8.

EDWARD L. WALTER, Prof. of Romance Langs. and Lits.

A.B., Mich., '68, and A.M., '71; Ph.D.; Leipzig, '77; Instr., Mich., '68-'79; Prof. of Mod. Langs., same, '79-'85.

*Teachers' Course in Fr. ii, 17, F.-Jun.

*Voltaire, Montesquieu, Rousseau. iii, 17, F.-Jun.

Fr. Lit. of 16th Cent. ii, 17, O.-F.

*Dante. Div. Com. ii, 17, O.-F.
Vita Nuova. ii, 17, F.-Jun.

*Dramas of Lope and Calderon. ii, 17, O.-F.

*Cervantes. Don Quixote. i, 17, F.-Jun.

PAUL R. DE PONT, Asst. Prof. of French.

A.B., Univ. de Paris, '56; B.S., same, '57.

*Fr. Dramatists of 18th Cent. iii, 17, O.-F.

Seminar. Victor Hugo's Dramas. ii, 17, F.-Jun.

Satirical Spirit in Fr. Lit. ii, 17, F.-Jun.

MORITZ LEVI, Intr. in French.

A.B., Mich., '87.

*Fr. Lit. of 17th Cent. ii, 17, F.-Jun.

Old French. ii, 34.

MINNESOTA.

11 Graduate Students, 1897-8.

CHARLES W. BENTON, Prof. of Romance Langs. and Lits.

A.B., Yale, '74, M.A., '76; Litt.D., Western Univ. of Penn., '97.

*Old French Phonology, with special reference to French forms in English. i, 36.

Dante's Divina Commedia. II Purgatorio. i, 36.

*Spanish. Modern Texts. i, 36.

Old Spanish. El Poema del Cid. i, 36.

The Romantic Movement in French Lit. i, 36.

MISSOURI.

5 Graduate Students, 1897-8.

RAYMOND WEEKS, Prof. of Romance Langs. and Lits.

A.B., A.M.; Ph.D., '97, Harvard; Instructor in French, Univ. of Mich., '91-3.

Old French. ii, 36.

Phonetics. ii, 18.

*Early French Lyric Poetry. ii, 18.

NEW YORK.

3 Graduate Students, 1897-8.

WILLIAM K. GILLET, Prof. of French and Spanish Langs. and Lits.

A.B., N. Y. U., '80, and A.M., '83.

Sources and Devel. of French Comedy. ii, 30.

Beginning and Growth of French Tragedy. i, 30.

Renaissance Lit. in France. i, 30.

Span. Lit. in the Time of Cervantes. i, 30.

History of the Drama in Spain. ii, 30.

GEORGE CANTE, Prof. of French Lit.

B. ès L. and Lic. en Droit, Univ. of France.

Fr. Lit. in 19th Cent. ii, 30.

Fr. Dramatists in 19th Cent. ii, 30.

NORTHWESTERN.

2 Graduate Students, 1897-8.

EDOUARD P. BAILLOT, Prof. of Romance Langs.

B.S., Paris, '77; Graduate Student, Paris, '79-'80; Student in Germany and Spain, '80-2; Instructor in Fr., Solent College, England, '83-5; Instr. Rom. Langs., Buffalo Seminary, '85-'90; Instr. in Fr., Cornell Univ., '90-1; Prof. Rom. Langs., Indiana Univ., '91-7; Northwestern, '97.

- *Lit. of Renaissance and Classic Drama. iii, 36.
- *Lit. of 18th Cent. ii, 25.
- *Med. Lit. Roland. Vie de St. Alexis. etc. Old French. ii, 11.
- *Mod. Lit., 1830-90. ii, 36.
- Old French, 9th to 14th Cent. i, 36.
- *[Italian. Dante. iii, 11. Modern Writers. iii, 36.]
- *Spanish. Modern Writers. iii, 36.

PENNSYLVANIA.

8 Graduate Students, 1897-8.

1 Fel. \$500 + tui.; 1 Schol., (see 4).

HUGO A. RENNERT, Prof. of Rom. Langs. and Lits.

B.S., Univ. of Penn., '76, LL.B., '82, and A.M., '91; Instr. Mod. Langs., '85-'92; Ph.D., Freiburg, '92.

- Old French. i, 30.
- Old Provençal. i, 30.
- Italian. Sicilian Poets. Dante. i, 30.
- Old Spanish. i, 30.
- Span. Drama of 17th Cent. i, 30.
- Portuguese. Camoens, Os Lusíadas; and Sonnets and Lyrics. i, 30.

PRINCETON.

2 Graduate Students, 1897-8.

G. MCLEAN HARPER, Prof. of Romance Langs.

A.B., Princeton, '84, and Ph.D., '92.

Mediaeval French Lit. ii, 36.

- *[French Lit. of Renaissance. ii, 36.]
- *[French Lit. of 17th Cent. ii, 36.]
- *Fr. Lit of 18th and 19th Cents. ii, 36.
- Dante and his Age. ii, 36.
- *The Inferno. ii, 18, F.-My.
- *Purgatorio and Paradiso. ii, 36.

E. S. LEWIS, Asst. Prof. of Romance Langs.

A.B., Wabash, '88, and A.M., '91; Ph.D., Johns Hopkins, '92.

- *Modern Spanish. ii, 36.
- *Old Fr. Readings. ii, 36.
- Old Fr. Philology. ii, 36.
- Physiological Phonetics. ii, 18, S.-Ja.
- Fr. Dialects. ii, 18, F.-My.
- Old Fr. Text Criticism. ii, 36.

W. U. VREELAND. Inst. in Romance Langs.

A.B., Princeton, '92, A.M., '96.

- *Old Provençal. ii, 36.

ARNOLD GUYOT CAMERON, Prof. of French.

A.B., Princeton, '86, and Ph.D., '91; Prof. of Mod. Lang., Miami and Yale Universities.

- Molière. Life, evolution, social satire, influence, and imitators. i, 36.

RADCLIFFE.

6 Graduate Students, 1897-8.

(See Harvard Courses marked R.)

Instructors offer to direct competent students in the investigation of special subjects in Romance Philology.

A. R. MARSH.

- Lit. and Fine Arts in Italy during Mid. Ages and Renaissance, with special study of Dante. iii, 30.

P. B. MARCON.

- *Span. Lit. of 16th and 17th Cents. Cervantes, Lope de Vega, Calderon. Comp. iii, 30.
- *French Lyric Poetry from Villon and 15th Cent. to Present time. lii, 30.

F. C. DE SUMICHRAST.

- *Gen. View of Fr. Lit. iii, 30.
- *Fr. Life in 17th and 18th Cents. iii, 30.
- *[Victor Hugo and the Romanticist Movement. ii-iii, 15, O.-Ja.
- *[Victor Hugo and the Reaction against the Romanticist Movement. ii-iii, 15, F.-Jun.
- *Voltaire and his Contemporaries. iii, 15, O.-Ja.
- *Fr. Drama in 18th Cent. ii-iii, F.-Jun. [Fr. Lit. in 17th Cent.]

J. B. FLETCHER.

*It. Lit. of 15th and 16th Cents.—Torquato, Tasso, Ariosto, Machiavelli, Cellini.

E. S. SHELDON.

Old French. *La Chanson de Roland*. iii, 30.
Chrétien de Troyes. *Ancassin et Nicolette*.

W. H. SCHOFIELD.

Origin and Lit. Hist. of the Arthurian Legends and Romances. iii, 30.

VANDERBILT.

3 Graduate Students, 1897-8.

T. A. JENKINS, Adj. Prof. of Rom. Languages.

A.B., Swathmore, '87; Ph.B., Pa., '88; Ph.D., Johns Hopkins, '94.

Old Fr. Gram. Morph. i, 32.

National Fr. Epic. ii, 16.

Provençal Lyrics. ii, 16.

*Molière, *La Fontaine, Boileau, Modern Lyrics, Ste.-Beuve, Daudet*. iii, 32.

WELLESLEY.

1 Graduate Student, 1897-8.

HÉLÈNE A. SCHAEYS, Inst. in French.

*French Lit. of 18th Cent. iii, 35.

*French Lit. of 19th Cent. iii, 35.

*Intro. Studies in Fr. Philology. ii, 35.

*Intro. Studies in Old Fr. Lit. i, 35.

MARGARET H. JACKSON, Instr. in Italian.

*[Hist. of Italian Lit. in 13th and 14th Cents. iii, 35.]

*Hist. of Italian Lit. in 19th Cent. iii, 35.

*Dante. *Divine Comedy* in Eng. iii, 17, F.-Jun.

WESTERN RESERVE.

3 Graduate Students, 1897-8.

F. M. WARREN, Prof. of Romance Languages.

A.B., Amherst, '80; Ph.D., Johns Hopkins, '87; Instr. in Mod. Langs., W. R. Col. and Adelbert, '81-3; Instr. and Assoc. in Mod. Langs., Johns Hopkins, '86-'91.

*17th Cent. French Lit. iii, 16, S.-Ja.

*Fr. Renaissance Lit. iii, 17, F.-Jun.

*[The Romantic School in France. iii, 16, S.-Ja.]

*[The 18th Cent. in France. iii, 17, F.-Jun.]

[Realists of 19th Century. —?]

*Spanish. iii, 16, S.-Ja.

[Italian (ol). iii, 16, S.-Ja.]

[Italian (adv). iii, 17, F.-Jun.]

M. L. COLVIN, Prof. of Romance Languages.

Ph.D., Zürich, '88; Prof. of Romance Langs., Col. for Women, W. R. U., '93.

Intro. to French Phonology. i, 33.

Old French Texts. ii, 33.

Provençal. iii, 33.

*Old Spanish. iii, 16, S.-Ja.

*Old Italian. iii, 17, F.-Jun.

WISCONSIN.

4 Graduate Students, 1897-8.

WILLIAM F. GIESE, Asst. Prof. of Romance Languages.

A.M., Harvard, '89; Instr. in French and Spanish, Cornell, '91-3.

*French Lit., 16th to 19th Cent. Lects., with collateral reading. ii, 36.

LUCY M. GAY, Instructor in French.

B.L., Wisconsin, '82.

Philol. Course in Oldest Fr. Lit. ii, 36.
[Old French Texts. ii, 36.]

YALE.

24 Graduate Students, 1897-8.

Mod. Lang. Club meets monthly. French Club.

JULES LUQUIENS, Prof. Mod. Langs.

D.B., Univ. Lausanne, '66; Ph.D., Yale, '73; Prof. Mod. Langs., Mass. Inst. Tech.

Early Fr. Lit. and Hist. Gram. ii, 32.

French Lit. of 16th Cent. ii, 32.

Middle Age Lit. in France. i, 32.

[Fr. Lit. of 18th Cent. ii, 32.]

*Systematic Readings in French Lit. of 17th Cent. ii, 32.

*Entretiens sur la Littérature Française du xvii^e siècle. iii, 32.

[Fr. Lit. of 19th Cent. iii, 32.]

Short Masterpieces of Fr. Lit. ii, 32.

Yale — continued

- H. R. LANG, Asst. Prof. of Rom. Langs.
Ph.D., Strassburg, '90.
Provençal Lan. and Lit. ii, 32.
Provençal (2d year). i, 32.
*Spanish (el). iii, 32.
*Spanish Lit., 16th-17th Cents. ii, 32.

- Beginnings of Span. Lit. i, 32.
*Dante's Life and Works. i, 32.
Petrarch. i, 32.

- R. T. HOLBROOK, Inst. in Rom. Lang.
A.B., Yale, '93.
*Italian (el). iii, 32.

6. INDO-IRANIAN, AND COMPARATIVE LANGUAGES AND LITERATURES.

(With Languages not otherwise classified. See also 1 to 5.)

BARNARD.

- Graduate Students, 1897-8.
[See Columbia Courses marked B.]

BROWN.

- 2 Graduate Students, 1897-8.
F. G. ALLINSON [see 2].
Comp. Greek and Latin Philol. iii, 11,
Ja.-Mar.
Sanskrit. iii, 33.

BRYN MAWR.

- 2 Graduate Students, 1897-8.

- HERMANN COLLITZ (see 4.)
Lects. on Comp. Philology and Philo-
logical Seminary. ii, 30.
Elementary Sanskrit. ii, 30.
Sanskrit (adv). i, 30.

CALIFORNIA.

- 4 Graduate Students, 1897-8.

- JOHN FRYER, Agassiz Prof. of Oriental
Langs. and Lits.
LL.D., Alfred Univ.
*Lang., Lit., Hist., Govt., and Social
Condition of China and Japan. ii,
16, Au.-D.
*Philosophies and Religions of China
and Japan. ii, 16, Ja.-My.
*Chinese Classical Literature from Eng-
lish Translations. i, 32.
*The Kuan-hua, or official spoken lan-
guage of China (el). iii, 32.
*The Kuan-hua (adv). iii, 32.

- *The Wen-li, or classical written lan-
guage of China and Japan (el). iii,
32.
*The Wen-li (adv). iii, 32.

CHICAGO.

- 12 Graduate Students, 1897-8; and 6
in Summer Quarter, '97.
3 Fellowships.

- CARL D. BUCK, Assoc. Prof. of Sanskrit
and Indo-European Comp. Philol.
A.B., Yale, '86, and Ph.D. '89; Leipzig, '89-
'92; Asst. Prof. Sanskrit and Indo-European
Comp. Philol., '92-4.
Sanskrit (el). iv, 12, O.-D., and Jul.-
S.
Avestan and Old Persian. iv, 12 O.-D.
[Lithuanian and Old Bulgarian. iv, 12,
Ja.-Mar.]
Outlines of Greek and Latin Comp.
Gram. iv, 12, Jul.-S., and Ja.-Mar.
[Italic Dialects. iv, 12, Ap.-Jun.]
Greek Dialects. iv, 12, Ap.-Jun.
Intro. to Study of Indo.-Europ. Phil.
iv, 12, Ap.-Jun.
Seminar. Indo.-Europ. Phonol. and
Morphol. ii, 12, Ja.-Mar.

- A. W. STRATTON, Assoc. in Sanskrit and
Comp. Philol.
A.B., Toronto, '87; Ph.D., Johns Hopkins,
'95.
Outlines of Comp. Gram. of Greek
and Latin. iv, 12, Jul.-S.
Sanskrit (el). iv, 12, Jul.-S.
Classical Sanskrit Texts. iv, 12, Ja.-
Mar.
Intro. to Vedic Study. iv, 12, Ap.-
Jun.

[Readings in the Upanishads. iv, 12, O.-D.]
 Pāli (el). iv, 12, Ja.-Mar.
 [Kālidāsa's Meghadūta and Rtusamhāra. iv, 12, Ap.-Jun.]
 [Kālidāsa's Çakuntalā. iv, 12, Ap.-Jun.]
 Selections from the Brāhmanas and the Epic. i, 36, O.-Jun.
 Seminar. Vedic. ii, 24, Ap.-Jun.

COLUMBIA.

9 Graduate Students, 1896-7.
 [Courses marked B are open to Barnard Students.]

A. V. WILLIAMS JACKSON, Prof. of Indo-Iranian Langs.

Ph.D., Columbia, '86; Lect. on Mazdean Religion, Harvard, '92.

- B)*Sanskrit (el). iii, 30.
- B)*Avestan (el). ii, 30.
- B)Sanskrit (adv). ii, 30.
- B)Avestan (adv). ii, 30.
- B)Pāli (el). i, 30.
- B)Old Persian Cuneiform Inscriptions. i, 16, O.-F.
- B)Pahlavi. i, 14, F.-Jun.
- B)Sanskrit Lit. i, 16, O.-F.
- B)Comp. Iranian Gram. i, 14, F.-Jun.
- B)Zoroaster and Buddha. i, 30.

ABRAHAM YOHANNAN, Lect. in Oriental Languages.

A.M., Columbia, '95; Grad. of Col. of Urmi, Persia, and of Gen. Theol. Sem., N. Y. City.

- B)Modern Persian. ii, 30.
- B)Armenian. ii, 30.
- B)Syriac (el.) ii, 30, (With Prof. Gottheil.)
- B)Turkish. ii, 30.

GEORGE R. CARPENTER, Prof. of Rhetoric and Eng. Composition.

A.B., Harvard, '86; Fel. in Comp. Lit., same, '86-8; Instr. in Eng., same, '89-90; Assoc. Prof. of Eng., Mass. Inst. of Technology, '90-3.

- B)Types of Mediæval and Renaissance Lit. iii, 30.
- B) Hist. of Lyric Poetry in Mid. Ages and Renaissance. iii, 30.
- B)Meghadūta and Rtusamhāra. iv, 12, Ap.-Jun.

- B)[Çakuntalā. iv, 12, Ap.-Jun.].
- B)Vedic Sem. Atharva-veda. ii, 24, O.-Mar.
- B)Brāhmanas and the Epic. i, 36, O.-Jun.

CORNELL.

6 Graduate Students, 1897-8.

The Bopp lib. of about 2,500 vols., relating to Oriental Lang. and Lit. and Comp. Philol. Ref. lib. of 2,500 vols. in Sem. Room. 1 Grad. Schol. \$300 for Depts. of Comp. Philol. and Class. Archaeol.

BENJAMIN I. WHEELER (see 2).

- Comp. Gram. of Greek and Latin. ii, 32.
- Advanced Sanskrit Readings from Rig.-Veda.
- Grammatical discussions. i, 32.

GEORGE P. BRISTOL (see 2.)

- Sanskrit (el). ii, 32.

HARVARD.

2 Graduate Students, 1897-8.

[Courses marked R are open to Radcliffe Graduate Students.]

Mod. Lang. Conf. brings together instructors and students in depts. of Eng., Ger., French, Romance Philol. and Comp. Lit. for adv. study and research. Mod. Lit. prize, \$250. Special lib. of Ger. and Romance Langs. and Lits. and the Child Memorial lib. in English. Besides numerous works on the lit. and antiq. of India, the Univ. has nearly 1,000 MSS. of Sansk. and Prsākṛit texts. All instructors offer to direct competent Grad. Students in research.

ARTHUR R. MARSH, Asst. Prof. of Comp. Lit.

A.B., Harv., '83; Prof. of Eng. Lit., Univ. of Kans., '85-8.

- Hist. of Latin Lit. in Middle Ages, and its Relations to Classic and Mod. Lit. iii, 30.

[Origin and Devel. of Historical Epic Poetry in Mediæval Europe. iii, 15, O.-Ja.]

[Legendary and Poetical Material of Celtic Origin, and its Treatment in Med. Narrative Poetry. iii, 15, F.-Jun.]

- *Med. Lit. in the Vulgar Tongues, with spec. ref. to Influ. of France and Provence. iii, 30.

Harvard — *continued*

CHARLES R. LANMAN, Prof. of Sanskrit.
Ph.D., Yale, '73; Fel. and Assoc., Johns Hopkins, '76-'80.

*Sanskrit (el). iii, 30.

*Classical Sanskrit (adv). Rapid Reading. iii, 15, O.-Ja.

R)Intro. to the Vedas. iii, 15, F.-Jun.

R)Pāli (el). Legendary Hist. of Buddha, Jātaka stories. ii-iii, 15, O.-Ja.

Pāli (adv). Sacred Books of Buddhism. ii-iii, 15, F.-Jun.

R)Adv. Study of Sansk. Works, with use of MSS. Research. —?

C. H. GRANDGENT [see 5] and H. C. G. VON JAGEMANN [see 4].

FRED N. ROBINSON.

A.B., Harv., '91; A.M., same, '92; Ph.D., same, '94; Stud. in Celtic, Freihurg. B., '95-6.

Old Irish Grammar and Interpretation of Texts. iii, 15, O.-Ja.

Middle Irish. Windisch's *Irische Texte*. iii, 15, F.-Jun.

[Old and Middle Welsh. iii, F.-Jun.]
Celtic Conference, Meetings fortnightly. Topic for 1898-9, Middle Irish Texts.

LEO WIENER, Instr. in Slavic Langs.

Gymnasium, Warsaw, '80; Univ. of Warsaw, '81; Polytechnic, Berlin, '82; Asst. Prof. of Mod. Lang., Mo. State Univ., '92-5.

*Russian. Grammar, Reading, and Composition. iii, 30.

*Russian Lit. 19th Cent. iii, 30.

*Polish. Grammar, Reading, and Composition. iii, 30.

*[Polish Lit. of 19th Cent. iii, 30.]
Old Church Slav. iii, 30.

W. H. SCHOFIELD (see 4).

Origin and Lit. Hist. of the Arthurian Legends and Romances. iii, 30.

JOHNS HOPKINS.

25 Graduate Students, 1897-8.

MAURICE BLOOMFIELD, Prof. of Sanskrit and Comp. Philol.

Fellow at Johns Hopkins, '78-9; Ph.D., '79; Assoc., '81-3; Assoc. Prof., '83-'91.

Com. Gram. of Phonetics. i, 30.

Advanced Lithuanian. i, 30.

Vedic Seminary. Rig-Veda. i, 30.

Classical Sanskrit (adv). Hitopadeśa and Manu. ii, 30.

Sanskrit (el). ii, 30.

Advanced Avestan. i, 30.

Gen. Comp. Phil. i, 30.

MICHIGAN.

o Graduate Students, 1897-8.

W. H. WAIT (see 2).

Sanskrit Gram. and Reader. iv, 34.

GEORGE HEMPL (see 3).

Linguistic Science. ii, 17, F.-Jun.

Phonetics. ii, 17, F.-Jun.

NEW YORK.

o Graduate Students, 1897-8.

FREDERIC T. COOPER (see 2).

Sanskrit (el). ii, 30.

Sanskrit (adv). ii, 30.

NORTHWESTERN.

3 Graduate Students, 1897-8.

JAMES T. HATFIELD (see 4).

*[Science of Language. i, 36.]

PENNSYLVANIA.

6 Graduate Students, 1897-8.

Pott Lib. of Philol., 6,500 vols.

MORTON W. EASTON (see 3).

Comp. Philol. Indo-European. Linguistics. ii, 30.

Sanskrit for beginners. ii, 30.

Advanced Sanskrit. ii, 30.

Phonetics. i, 30.

DANIEL G. BRINTON, Prof. of Am. Archaeol. and Linguistics.

A.B., Yale, '58, and A.M., '60; M.D., Jeff. Col., '60; LL.D., same, '91; Sc.D., Univ. of Pa., '93.

Nahuatl Lang. and Lit.

Mayan and Mex. Hieroglyphics.

Gen. Struct. of Am. Langs.

Antiquities of East. U. S.

Outlines of Am. Archaeol.

PRINCETON.

3 Graduate Students, 1897-8.

S. R. WINANS [see 2].

*Sanskrit Gram. and Reading. ii, 36.
Sanskrit and Comp. Gram. ii, 36.

C. MARTIN [see 1].

Siamese. ii, 36.

E. Y. ROBBINS [see 2].

Avestan and Old Persian. ii, 36.

RADCLIFFE.

5 Graduate Students, 1897-8.

(See Harvard Courses marked R.)

C. R. LANMAN.

*Sanskrit (el). iii, 15, O.-Ja.
*Sanskrit (2d course). iii, 15, F.-Jun.

A. R. MARSH.

*Mediaeval Lit. in the Vulgar Tongues,
with special ref. to Influ. of France
and Provence. iii, 30.

LEO WIENER.

*Russian Grammar, Reading, and Comp.
iii, 30.

VANDERBILT.

1 Graduate Student, 1897-8.

H. C. TOLMAN [see 2].

Sanskrit Gram. and Readings. iii, 32.
Sanskrit Lit. Lects. i, 8.
Veda, Chandogya, Upanishad, Sanskrit,
Composi. iii, 32.
Persian Cuneiform Inscript. i, 16.

WELLESLEY.

1 Graduate Student, 1897-8.

HELEN L. WEBSTER, Prof. of Comp.
Philology.

Ph.D., Zürich, '89.

*Sanskrit. iii, 35.
*Intro. to Science of Lang. iii, 17,
S.-Ja.
*Intro. to Science of Comp. Philol. iii,
17, F.-Jun.

*Comp. Gram. of Greek and Latin. iii,
35.

Comp. Gram. of the Teutonic Langs.
iii, 35.

*Historical Latin Gram. Readings from
Gellius, Varro, Quintilian, Cicero.
iii, 35.

WESTERN RESERVE.

0 Graduate Students, 1897-8.

S. B. PLATNER [see 2].

Sanskrit. iii, 36.

WISCONSIN.

4 Graduate Students, 1897-8.

A. G. LAIRD [see 2].

*Sanskrit (el). ii, 36.

Sanskrit (adv.) i, 36.

*Comp. Greek and Latin Gram. ii, 36.

EDWARD T. OWEN, Prof. of French
Lang. and Lit.

A.B., Yale, '73; Prof. of French, California,
'86-7.

[Correspondence of Thought and Lan-
guage. i, 18.]

YALE.

25 Graduate Students, 1897-8.

E. W. HOPKINS, Prof. of Sanskrit and
Comp. Philol.

A.B., Columbia, '78; Ph.D., Leipzig, '81;
Asst. in Latin and Instr. in Zend, Columbia,
'81-4; Prof. of Greek, Sanskrit and Comp.
Philol., Bryn Mawr, '84-5.

[Intro. to Comp. Syntax. ii, 32.]

Sanskrit (el). iii, 32.

Sanskrit (adv). ii, 32.

Hist. of Sanskrit Lit. ii, 32.

Avestan Lang. and Lit. i, 32.

[Pāli. i, 32.]

HANS OERTEL, Asst. Prof. of Comp.
Philol.

A.M., Yale, '88, and Ph.D., '90.

Linguistics. ii, 32.

Phonetics. i, 32.

Comp. Phonology and Morphology of
Greek and Latin. ii, 32.

II. PHILOSOPHY, HISTORY, ECONOMICS, AND THE FINE ARTS.

7. PHILOSOPHY AND ETHICS.

[With Comparative Religion.]

BARNARD.

5 Graduate Students, 1897-8.
[See Columbia Courses marked B.]

BROWN.

6 Graduate Students, 1897-8.

E. BENJAMIN ANDREWS, President, and
Prof. of Moral and Intellectual Philos.

Pres. of Denison, '75-9; Prof. Pract. Theol.,
Newton Theol. Inst., '79-'82; Prof. Hist. and
Pol. Econ., Brown, '83-8; Prof. Pol. Econ., and
Pub. Finance, Cornell, '88-9.

*Practical Ethics. iii, 21, Ja.-Jun.

*Casuistry. i, 21, Ja.-Jun.

*Christian Religion. i, 10, Ap.-Jun.

WALTER G. EVERETT, Assoc. Prof. of
Philos. and of Natural Theology.

A.B., Brown, '85, A.M., '88, and Ph.D., '95;
Instr. Gk., same, '90-1; Instr. Latin, '91-4.

*Theoretical Ethics. iii, 23, S.-Mar.

*Philos. of Religion. iii, 10, Ap.-Jun.

*Hist. of Mod. Philos. iii, 10, Ap.-Jun.
Philosophical Sem. iii, 33.

*Hist. of Philos. iii, 33.

E. B. DELABARRE (see 8).

*Course in Authors. iii, 33.

ALEX. MEIKLEJOHN, Instr. in Philosophy.

A.B., Brown, '93, and A.M., '94; Ph.D., Cor-
nell, '97.

Kantian Philosophy. iii, 33.

BRYN MAWR.

3 Graduate Students, 1897-8.
1 Fellowship, \$525.

D. S. MILLER, Assoc. in Philos.

Fel., Clark, '89-'90; Morgan, Fel. Harv., '90-1;
Walker Fel., '91-2; A.B., and A.M., '92;
Ph.D., Halle, '93.

Recent Philosophic Theories. ii, 30.

[German Idealism. ii, 30.]

[Logic. ii, 30.]

*German Idealism. iii, 30.

*[Early Modern Philosophy. iii, 30.]

CALIFORNIA.

5 Graduate Students, 1897-8.

GEORGE H. HOWISON, Prof. of Intel-
lectual and Moral Philos. and Civil
Polity.

A.M., and LL.D., Marietta.

Hegel's Logic. Sem. iv, 32.

Philos. of Plato. ii, 32.

*Philos. of Kant. ii, 32.

*Ethics and Civil Polity. ii, 32.

GEORGE M. STRATTON, Asst. Prof. of
Psychology, in charge of Psychological
Laboratory.

A.B., Univ. of Cal.; A.M., Yale; Ph.D.,
Leipzig.

Psychological Research. xv, 32.

*Psychological Conference. ii, 16.

EVANDER B. MCGILVARY, Asst. Prof. of
Logic and the Theory of Knowledge.

A.M., Princeton; Ph.D., Univ. of Cal.

Logical Seminary. ii, 32.

*General Logic (adv). ii, 32.

*Theory of Knowledge. iii, 16.

CHARLES M. BAKEWELL, Instr. in Philos.

A.B., Univ. of Cal.; A.M., *ibid.* and Harvard;
Ph.D., Harvard, '97.

*Recent French Philosophy. ii, 32.

CHICAGO.

58 Graduate Students (incl. Psychol.), 1897-8; and
49 in Summer Quarter, '97.

4 Fels. in Philosophy; 1 in Comp. Religion.

JOHN DEWEY, Head Prof. of Philos.

A.B., Vermont, '79; Fellow, Johns Hopkins, '83-4, and Ph.D., '84; Prof. of Philos., Minn., '88-9; Prof. of Philos., Mich., '89-'94.

*Movement of Thought in the 19th Century. iv, 6, Jul.-Au.

[Seminar. Philos. of Hegel. ii, 36, O.-Jun.

[Logic of Ethics. iv, 12, O.-D. Psychol. Ethics, Ja.-Mar.; Pol. Ethics, Ap.-Jun.]

[Seminar. Ethics. ii, 6, Jul.-Au.]

Seminar. Problems in Metaphysics. ii, 24, O.-Mar.

Theory of Criticism and Interpretation. ii, 12, O.-D.

JAMES H. TUFTS, Assoc. Prof. of Philos.

A.B., Amherst, '84; Instr. in Math., same, '85-7; D.B., Yale, '89; Instr. in Philos., Mich., '89-'91; A.M., Amherst, '90; Asst. Prof. of Philos., Chicago, '92; Ph.D., Freiburg, '92.

*[Individualism in Mod. Thought. iv, 12, Jul.-S.]

[Sem. in Cartesianism. ii, 12, Jul.-S.]

*Hist. of Greek Philos. iv, 12, O.-D.

*Hist. Mod. Philos. iv, 12, Ja.-Mar.

[Sem. in Eng. Philos. ii, 24, O.-Mar.]

[Hist. of Æsthetic Theory. iv, 12, Ap.-Jun.]

Seminar. Kant. ii, 12, Ja.-Mar.

Kant's Critique of Pure Reason. iv, 12, Jul.-S.

Leibnitz. iv, 6, Au.-S.

Philosophy of Kant. iv, 12, O.-D.

GEORGE H. MEAD, Asst. Prof. of Philos.

A.B., Harv., '88; Instr. in Philos., Mich., '91-3; Asst. Prof. same, '93-4.

[Sem. in Greek Philos. ii, 24, O.-Mar.]

Sem. in Med. Philos. ii, 24, O.-Mar.

Philos. of Nature. iv, 12, O.-D.

[Logic. iv, 12, Ap.-Jun.]

Movement of Thought in 19th Century. iv, 12, Ap.-Jun.

GEORGE STEPHEN GOODSPEED, Prof. of Comp. Relig. and Ancient Hist., and Univ. Recorder.

A.B., Brown, '80; A.M., same, '83; D.B., Bap. Union Theol. Sem., '83; Asst. in Semitic Dept., Yale, '88-'91; Ph.D., Yale, '91.

Relig. of Greece. iv, 6, Jul.-Au.

Comp. Theol. Relig. Doctrines. Seminar. ii, 12, O.-D.

Relig. of Anc. India and Persia. iv, 12, Ja.-Mar.

Relig. of Greece, Rome and North. Europe. iv, 12, Ap.-Jun.

Relig. of Anc. Semitic World. iv, 36.

Egypt, O.-D.; Babylonia and Assyria, Ja.-Mar.; Israel, Phoenicia and Syria, Ap.-Jun.

Relig. of the Semites. iv, 36, O.-Jun. Islam. iv, 12, Ap.-Jun.

Beginnings of Judaism. iv, 6, Jul.-Au.

Comp. Theology. Institutions of Religion. Sem. ii, 12, O.-D.

EDMUND BUCKLEY, Docent in Comp. Religion.

A.B., and A.M., Mich., '84; Prof. of Philos., Doshisha, Kyoto, '86-'92; Fel. in Comp. Relig., Chicago, '93-4; Ph.D., same, '94.

Outline Hist. of Religion. iv, 12, O.-D.

Science of Relig. iv, 12, Ja.-Mar.

Philos. of Relig. Sem. ii, 12, Ap.-Jun.

FULTON JOHNSON COFFIN.

A.B., Dalhousie Col., '86; A.M., Princeton Col., '89; Instr. O. T. and Gospel Hist., Presbyterian Missionary Col., '89-'93; Hirsch Fellow in Comp. Relig., Chicago, '93-5; Fellow, same, '95-7.

Hindī. iv, 12, Ja.-Mar.

Outline Hist. of Religion. iv, 12, Ja.-Mar.

COLUMBIA.

50 Graduate Students, 1896-7.

[Courses marked B are open to Barnard Students.]

NICHOLAS MURRAY BUTLER, Prof. of Philos. and Education.

A.B., Columbia, '82, A.M., '83, and Ph.D., '84; Univ. Fel. in Philos., '82-5; Asst. in Philos., '85-6; Tutor, '86-9; Adj. Prof., '89-'90; Prof. of Philos., Ethics and Psychol., and Lect. on Educa., '90-5; Pres. N. Y. Col. for Teachers, '87-'91.

B)Hist. Intro. to Philos. ii, 30. (With Dr. Wilde.)

B)Philos. of Kant and His Successors. ii, 30.

B)British Philos. from Locke to Spencer. ii, 30.

B)Seminar. Philosophy. i, 30.

Columbia — continued

JAMES H. HYSLOP, Prof. of Logic and Ethics.

A.B., Wooster, '77, and A.M., '79; Ph.D., Johns Hopkins, '87; Prof. of Psychol., Bucknell, '88; Tutor in Philos., Columbia, '89-'90; Instr. in Logic and Ethics, '91-5.

B) Ethics. ii, 30. (With Dr. Wilde.)

B) Practical Ethics. ii, 30.

B) Seminar. Ethics. i, 30.

B) Systematic Ethics. ii, 30.

Applied Logic and Scientific Method. iii, 14, F.-Jun.

Psychology and Logic. iii, 16, O.-F.

Epistemology and Metaphysics. ii, 30.

NORMAN WILDE, Assistant.

B) Hist. of English Ethics. i, 16, O.-F.

Hist. and Prin. of Aesthetics. ii, 30.

Journal Club.

CORNELL.

19 Graduate Students, 1897-8.

Courses here announced and those in 8 belong to the Susan Linn Sage School of Philosophy. 10 officers of instruction. Kant coll. of 100 vols.; complete Spinoza coll. of 500 vols.; psychol. lab. of 10 rooms. The school issues the Philos. Review. Monthly conference of students. 3 Fels., \$500 each, and 6 Grad. Schols., \$300 each.

JAMES SETH, Prof. of Moral Philos.

A.M., Edinburgh, '81; Hon. Sc.D., Columbia; Baxter Scholar, Edinburgh; Ferguson Scholar in Philos.; Prof. of Philos., Dalhousie and Halifax, '89-'92; Assoc. Prof. Nat. Theol., Brown, '93-4; Prof. Philos. and Nat. Theol., Brown, '94-6.

*Systematic Ethics. iii, 32.

*Hist. of Ethics. ii, 32. (With Dr. Albee.)

Ethical Seminary. ii, 32. (With Dr. Irons.)

CHARLES M. TYLER, Prof. of Hist. and Philos. of Relig. and Christian Ethics.

A.B., Yale, '55, and A.M.; D.D., same, '92.

*Hist. of Religions. ii, 32.

*Applied Ethics. i, 32.

*Philos. of Relig. iii, 32.

JAMES E. CREIGHTON, Prof. of Logic and Metaphysics.

A.B., Dalhousie, '87; Fel. in Philos., Cornell, '88-9; Instr. in Philos., '89-'91; Ph.D., '92.

*Hist. of Philos. iii, 32.

[Logical Theory. ii, 32.]

Post-Kantian Idealism. ii, 32.

Seminary in Modern Philosophy. ii, 32. (With Dr. Albee.)

WILLIAM A. HAMMOND, Asst. Prof. of Anc. and Med. Philosophy.

A.B., Harv.; Ph.D., Leipzig, '91; Instr. in Anc. Philos., Cornell, '91-2.

*Hist. of Ancient and Mediaeval Philos. ii, 32.

*Dialogues of Plato (Gk). iii, 32.

Aristotle's Nicomachean Ethics (Gk). iii, 32.

Sem. in Aristotle's *De Anima*. ii, 32.

ERNEST ALBEE, Instr. in Hist. of Philos.

A.B., Univ. of Vt.; Ph.D., Cornell, '94.

*The Critical Philos. of Kant. ii, 32.

*Empiricism and Rationalism. ii, 32.

Spinoza's Ethics. ii, 12, O.-D.

DAVID IRONS, Instructor in Philos.

A.M., St. Andrews, '91; Ferguson Scholar in Philos., '92-4; Ph.D., Cornell, '94.

*The Theory of Evolution: Its History and Significance. i, 32.

*Rapid Reading of German Philosophy. i, 32.

[German Pessimism, with special reference to Schopenhauer and E. von Hartmann. ii, 32.]

Recent German Philosophy. i, 32.

HARVARD.

33 Graduate Students, 1897-8.

(Courses marked R are open to Radcliffe Graduate students.)

2 Fels. of \$500 and \$450 preferably awarded to students of this dept.

CHARLES C. EVERETT, Prof. of Theology.

A.B., Bowdoin, '50, and A.M.; S.T.D., same, '70, and Harv., '74; LL.D., Bowdoin, '94.

*Psychol. Elements of Relig. Faith. i, 30.

*Content of Christian Faith. iii, 30.

*Comparative Religion. ii, 30.

GEORGE H. PALMER, Prof. of Nat. Relig., Moral Philos., and Civil Polity.

A.B., Harv., '64, and A.M., '67; LL.D., Mich., '94; Tutor in Greek, '70-3; Asst. Prof. Philos., '73-'83.

*Ethics. iii, 30.

R)Ethics Sem. Hist. Devel. of Ethical Thought in England. ii, 30.

WILLIAM JAMES [see 8].

*Philos. of Kant. iii, 15, O.-Ja.

*Metaphysics. Fundamental Problems of Theoretical Philosophy. iii, 30.

JOSIAH ROYCE, Prof. of Hist. of Philos.

A.B., Cal., '75; Ph.D., Johns Hopkins, '78; Instr. in Eng., Cal., '78-'82; Instr. in Philos., Harv., '82-5; Asst. Prof. Philos., '85-'92.

*Descartes, Spinoza, and Leibnitz. iii, 15, F.-Jun.

*Philosophy of Nature, with special ref. to Man's Place in Nature. iii, 30.

R)Metaphysical Sem. Problems of Logic and Epistemology. ii, 30.

GEORGE SANTAYANA, Asst. Prof. of Philos.

A.B., Harv., '86, A.M., '89, and Ph.D., '89.

*Greek Philos., with special ref. to Plato. iii, 30.

*[Hist. of Eng. Philos. Locke to Hume. iii, 15, F.-Jun.]

*Æsthetics. iii, 15, F.-Jun.
Scholastic Phil. ii, 30.

JOHNS HOPKINS.

10 Graduate Students, 1897-8.

E. H. GRIFFIN, Prof. of Hist. of Philos.

A.B., Williams, '62, and A.M., '65; Prof. of Latin, Williams, '72-'81; Prof. of Rhetoric, '81-6, and Mark Hopkins Prof. of Intellectual and Moral Philos., '86-9; D.D., Amherst, '80; LL.D., Princeton, '88.

Modern Philos. Descartes to Kant. i, 30.

Mod. Ethical Theories. Fort. 30.

LELAND STANFORD, JR.

[See courses under 8.]

MICHIGAN,

23 Graduate Students, 1897-8.

The library of the late Prof. George S. Morris has been given to the University. It contains about 1,100 volumes which have been placed in a Seminary Room for the exclusive use of graduate students in Philosophy.

ROBERT MARK WENLEY, Prof. of Phil.

A.M. (First Class Philos.), Glasgow, '84; Sc.

D., Edinburgh, '91; Ph.D., Glasgow, '95; Asst. Prof. Logic, same, '84-8 and '91-3; Head of Philos. Dept. Queen Margaret College, same, '87-'93.

Kant's Critique of Pure Reason. ii, 17, O.-F.

*Dev. of Anc. Ethical Ideas. ii, 17, O.-F.

*[Dev. of Med. Ethical Ideas. ii, 17, O.-F.]

Hegel's Logic. ii, 17, F.-Jun.

[Philos. since Hegel. ii, 17, F.-Jun.]

Ethics (with Prof. Lloyd). iii, F.-Jun.

[Move. of Thought in 19th Cent. ii, 17, F.-Jun.]

Seminary in Ethics. ii, 34.

Seminary in Metaphysics. ii, 34.

ALFRED H. LLOYD, Junior Prof. of Philos.

A.B., Harvard, '86; A.M., '88; Walker Fellow, '89; and Ph.D., '93; Instructor in Philos., Mich., '91; Asst. Prof. of Philos., same, '95.

*History of Philos. iii, 34.

*Philos. of Hist. ii, 17, O.-F.

Philos. of Religion. ii, 17, O.-F.

Special Studies in Hist. of Philos. i, 17, F.-Jun.

*Ethics (with Prof. Wenley). iii, 17, F.-Jun.

*Metaphysic of Ethics. i, 17, F.-Jun.

*Political Philos. ii, 17, F.-Jun.

Seminary in Hist. of Philos. ii, 34.

Seminary in Ethics. ii, 34.

GEORGE REBEC, Instr. in Philos.

Ph.B., Mich., '91; Instr. in Eng., same, '91-3; Ph.D., same, '97.

Plato's Republic. ii, 17, O.-F.

*British Philos. ii, 17, O.-F.

*[Philos. in America. ii, 17, O.-F.]

*Æsthetics. ii, 34.

*Second Course in Logic. ii, 17, F.-Jun.

Seminary in Logic. ii, 34.

Seminary in Æsthetics. ii, 34.

MINNESOTA.

20 Graduate Students, 1887-8.

FREDERICK J. E. WOODBRIDGE, Prof. of Philos.

A.B., Amherst, '89; Instr. in Philos., Minn., '94-5.

Pre-Socratic Philos. ii, 36.

Minnesota — continued

Philosophy of Kant. ii, 36.
 Logic (adv). ii, 36.
 Ethics (adv). ii, 36.
 Hist. of Philosophy. iv, 36.

NORMAN WILDE, Instr. in Philos.

A.B., Columbia, '89; Ph.D., Columbia, '94;
 Assistant in Philos., Columbia, '94-8.
 [Philosophy of Aristotle. ii, 36.]
 [English Philosophy. ii, 36.]
 [Philosophy of Hegel.]

MISSOURI.

3 Graduate Students, 1897-8.

FRANK THILLY, Prof. of Philosophy.

A.B., University of Cincinnati, '87; Ph.D.,
 University of Heidelberg, '91.
 Modern Criticism. iii, 36.
 *Child Psychology. iii, 36.
 *History of Philosophy. iii, 36.

NEW YORK.

49 Graduate Students, 1897-8.

H. M. MACCRACKEN, Chancellor, and
 Prof. of Philos.

D.D., Wittenberg, '78; LL.D., Miami, '87;
 Chancellor, Univ., West Pa., '80-4; Prof.
 Philos., N. Y. U., '84; Vice-Chancellor, same,
 '85-'91.

[Hist. of Ancient Philos. ii, 30.]
 [Hist. of Modern Philos. ii, 30.]
 Contemporary Ethics. ii, 30.]
 [Philosophy of Theism. ii, 30.]
 [Scottish Philosophy and Kant. ii, 30.]

ADDISON BALLARD, Prof. of Logic.

A.M., Williams, '42; D.D., same, '67; Prof.
 Latin, Ohio Univ., '47-'54; Prof. Rhetoric,
 Williams, '54-'5; Prof. Moral Phil. and Rhet-
 oric, Lafayette, '79-'94.
 Logic. i, 30.

J. H. MACCRACKEN, Instructor in Phil-
 osophy.

A.B., New York, '94; A.M., New York, '97.
 Studies in Locke, Berkeley and Hume.
 ii, 30.

EDWARD F. BUCHNER [see 8].

Introd. to Philos. ii, 30.
 Modern Pessimism. ii, 30.
 Æsthetics. i, 30.

[Logical Science. ii, 30.]
 [Philosophy of Kant. ii, 30.]
 [Lotze's Microcosmus. ii, 30.]

SAMUEL WEIR, Prof. of Ethics.

A.B., and B.D., Northwestern, '89; A.M., Illi-
 nois Wesleyan, '91; Ph.D., Jena, '95.

[Epistemology. ii, 30.]
 Metaphysics. ii, 30.
 [German Philos. since Kant. ii, 30.]
 Ethical Theory. ii, 30.
 [Philos. of the Supernatural. ii, 30.]
 Christian Ethics.
 History of Ancient and Mediæval Phil-
 osophy. ii, 30.

F. F. ELLINWOOD, Prof. of Comparative
 Religion.

D.D., N. Y. U., '65; LL.D., same, '94.
 Comparative Religion. ii, 30.
 Comp. Relig. (adv). ii, 30.
 Philosophy of Religion. ii, 30.

NORTHWESTERN.

3 Graduate Students, 1897-8.

GEORGE A. COE, Prof. of Philos.

A.B., Rochester, '84, and A.M., '88; S. T. B.,
 Boston, '87, and Ph.D., '91; Prof. of Philos.,
 Univ. of So. Cal., '89-'90; Sleeper Traveling
 Fel., at Berlin, '90-1.

*Philos. of Kant. ii, 36.
 *[Locke, Leibnitz, Berkeley, Hume. ii,
 18.]
 *Theory of Knowledge and Metaphysics.
 iv, 18.
 Metaphysical Seminary. ii, 36.

PENNSYLVANIA.

31 Graduate Students, 1897-8.

1 Fel. in Philos. or Psychol. \$500 + tui.; 1 Schol.
 \$100 + tui., (see 9).

GEORGE S. FULLERTON, Vice-Provost of
 Univ., and Prof. of Intell. and Moral
 Philos. (abs. 1898-9).

A.B., Univ. of Pa., '79, and A.M., '82; D.B.,
 Yale, '83; Instr. in Philos., '83-'5; Adj. Prof.
 of Philos., '85-'7; Ph.D. (hon.), Muhlberg.

[Hist. of Anc. Philos. ii, 30.]
 [Hist. of Mediæval Philos. ii, 30.]
 [Hist. of Mod. Philos. ii, 30.]
 [Epistemology. Seminary. ii, 30.]

WM. ROMAINE NEWBOLD, Asst. Prof. of Philos., and Dean of Dept. of Philos. (Graduate School.)

A.B., Univ. of Pa., '87; Instr. in Lat., '89-'91; Ph.D., same, '91; Lect. on Philos., 90-4.

Seminary. Hist. of Mod. Ethics. ii, 30.

Seminary. Socrates, Plato and Aristotle. ii, 30.

[Seminary. Stoics, Epicureans and Skeptics. ii, 30.]

[Seminary. Philos. of the Renaissance. ii, 30.]

[Seminary. Empirical Movement of 18th and 19th Cents. ii, 30.]

[Analysis of Ethical Theories. ii, 15.]

[Factors of Conduct. ii, 15.]

[Seminary. Hist. Græco-Rom. Ethics. ii, 30.]

EDMUND T. SHANAHAN, Assoc. Prof. of Philos. Cath. Univer. of America.

A.B., Boston College, '88; D.D., Propaganda Rome, '93; J. C. L., Seminario Romano, '94; Ph.D., Accademia Romano, '95.

Mediæv. Philos. 25 Lectures.

EDGAR A. SINGER, JR., Instr. in Philos.

B.S., Univ. of Pa., '92; Ph.D., same, '94.

German Idealism, Kant, Fichte, and Schopenhauer. ii, 30.

Seminary. Develop. Scien. Thought. ii, 30.

[Germ. Idealism. Kant, Schelling, and Hegel. ii, 30.]

[Modern Logic. ii, 30.]

[Review of Contemp. Thought. ii, 30.]

PRINCETON.

18 Graduate Students, 1897-8.

Collection on Aristotle and his Philos., 300 vols.

F. L. PATTON, Pres., Prof. of Bibl. Instr. and Prof. of Ethics and Philos. of Religion.

A.B., Hanover Col., '72; LL.D., Wooster Univ., '78; Prof. Theology, Chicago Theol. Sem.; Prof. Relation Philos. and Science to Religion, Princeton Theol. Sem.; Lecturer Theism, Princeton Theol. Sem.; D.D., Yale, '88; LL.D., Harv., '89; LL.D., Toronto, '94.

*Ethics. ii, 18, S.-Ja.

*Theism. ii, 36.

*Evidences of Christianity. i, 18, F.-My.

C. W. SHIELDS, Prof. of Harmony of Science and Revealed Religion.

A.B., Princeton, '44; D.D., same, '61; LL.D., Columbian Univ.

*Harmony of Science and Religion. ii, 18, F.-My.

History and Logic of Sciences, with ref. to Religion. ii, 18, F.-My.

A. T. ORMOND, Prof. of Mental Science and Logic.

A.B., Princeton, '77; Ph.D., same, '80.

*[History of Anc. Philos. ii, 18, S.-Ja.]

*[History of Med. Philos. ii, 18, F.-My.]

*History of Philos., Descartes to Kant. ii, 18, F.-My.

*History of Philos., since Kant. ii, 18, F.-My.

*Elements of Epistemology. ii, 18, S.-Ja.

*Metaphysics. ii, 18, F.-My.

Outlines of Philos. ii, 18, F.-My.

Selected Topics in Philos. ii, 36.

Mod. and Contemp. Philos. Seminary. ii, 36.

J. G. HIBBEN, Prof. of Logic.

A.B., Princeton, '82; Ph.D., same, '93.

*Inductive Logic and Gen. Theory of Logic. ii, 18, S.-Ja.

*Symbolic Logic and Theory of Probability. ii, 18, F.-My.

RADCLIFFE.

9 Graduate Students, 1897-8.

(See Harvard Courses marked R.)

JOSIAH LOYCE.

*Phil. of Nature, with especial ref. to Man's Place in Nature. iii, 30.

G. H. PALMER.

*Ethics. iii, 30.

GEORGE SANTAYANA.

*Greek Phil. iii, 15, O.-Jan.

VANDERBILT.

o Graduate Students, 1897-8.

COLLINS DENNY, Prof. of Mental and Moral Philosophy.

A.B., Princeton; B.L., Univ. Va.; A.M., Princeton.

Formal Logic. iii, 8, O.-N.

Induction. iii, 5, N.-D.

Theory of Morals. iii, 5, D.-Ja.

Hist. Philosophy. iii, 5, F.-Mar.

Ethics (el). iii, 12.

*Hist. and Outline Anc. and Mod.

Philos. ii, 32.

WELLESLEY.

o Graduate Students, 1897-8.

ANNE E. MORGAN, Prof. of Philos.

A.B., Oberlin, '66, and A.M., '69.

[Philosophy of Religion. iii, 35.]

MARY S. CASE, Assoc. Prof. of Psychol. and Hist. of Philos.

A.B., Mich., '84.

*Social Philosophy. iii, 17, F.-Jun.

*General Hist. of Philos. iii, 35.

MARY W. CALKINS (see 8).

*British and Ger. Philos. of 17th and 18th Cents. iii, 35.

*German Philosophy. iii, 35.

ELIZA RITCHIE, Assoc. Prof. of Philosophy.

B.L., Dalhousie, '87; Ph.D., Cornell, '89.

*[Greek Philosophy. iii, 35.]

*Philos. Seminary. Spinoza and Leibnitz. iii, 35.

ELLEN HAYES (see 12).

*Principles of Inference. i, 35.

WESTERN RESERVE.

7 Graduate Students, 1897-8.

M. M. CURTIS, Prof. of Philosophy.

A.B., Hamilton, '80; D.B., Union Theol. Sem., '83; A.M., Hamilton, '83; Ph.D., Leipzig, '90.

*Greek Phil. and its relation to the Rise of Christianity. iii, 16, S.-Ja.

*British Phil. from Bacon to Hume. iii, 16, S.-Ja.

Phil. of Herbert Spencer. iii, 17, F.-J.

Phil. of Kant. iii, 17, F.-Jun.

*Introduction to Philosophy. -iii, 17, F.-Jun.

Introduction to History of Phil. and Religion. iii, 17, F.-Jun.

Sociology in the Light of Anthropology. iii, 36.

HERBERT AUSTIN AIKINS, Prof. of Philosophy.

A.B., Univ. of Toronto, '87; Instr. Univ. of So. Cal., '88; Yale Univ., '88-'91; Lect. on Hist. of Phil., Yale Univ., '90-'1; Ph.D., Yale, '91; Prof. of Logic and Phil. Trinity Col., N. C., '91-'3; Hon. Fellow, Clark Univ., '92-'3; Prof. of Phil., College for Women, '93.

*History of Philosophy. iii, 36.

Modern Philosophy. ii, 36.

WISCONSIN.

4 Graduate Students, 1897-8.

JOHN W. STEARNS, Prof. of Philos. and Pedagogy.

A.B., Harv., '60, and A.M., '64; Prof. Latin, Chicago, '65-'74; LL.D., Chicago, '74; Prof. Pedagogy, Wis., '85-8.

Hist. Greek Philos. iii, 18, F.-Jun.

Philos. Mod. Science. ii, 18, F.-Jun.

FRANK C. SHARP, Asst. Prof. of Philos.

A.B., Amherst, '87; Ph.D., Berlin, '92.

Adv. Analytical Psychology. ii, 18, F.-Jun.

Theory of Cognition. iii, 36.

Readings in Ger. Philos. ii, 18, S.-F.

*Ethics (adv). iii, 18, S.-F.

*Applied Ethics. ii, 18, F.-Jun.

YALE.

43 Graduate Students, 1897-8.

Philosophical Club.

G. T. LADD, Prof. of Philosophy.

A.B., West. Res., '64; A.M., Yale, '81, and West. Res.; D.D., West. Res., '81; LL.D., same, '95; Prof. Mental and Moral Philos., Bowdoin.

Phil. of Religion. ii, 32.

Philosophical System. ii, 32. (See under 4 Prof. Palmer's course on Hegel).

*Intro. to Phil.

- [Kant. Seminary. ii, 32.]
 [Metaphysics. ii, 32.]
G. M. DUNCAN, Prof. of Philosophy.
 A.B., Univ. City N. Y., '81, and A.M.; D.B.,
 Yale, '84.
 Epistemology. i, 32.
 *Hist. of Mod. Philos. ii, 32.
 [Philos. of Empiricism. 'ii, 32.. (With
 G. Green.)]
 Discussions in Phil. i, 32.
H. S. WILLIAMS (see 17).
 *The Theory of Evolution. ii, 32.
E. H. SNEATH, Asst. Prof. of Philos.
 A.B., Lebanon Valley, '81, and A.M., '84;
 D.B., Yale, '84, and Ph. D., '89.

- [Philosophy and Lit. i, 32.]
 *Philos. Anthropology. ii, 32.
 [Philos. Skepticism. ii, 32.]
 Philosophy of Mind. i, 32.
 Hist. of Mod. Ethics. ii, 32.
GERVASE GREEN, Instr. in Philos.
 A. B. Yale, '94., Ph.D. '97.
 [Logic (adv). i, 32.]
 * [Hist. of Anc. and Mediæval Philos.]
 ii, 32.
 *Readings in Philosophy.

-
- Pre-Socratic Philosophy. ii, 32.
 Aristotle. ii, 32.

8. PSYCHOLOGY AND PEDAGOGICS.

BARNARD.

- 9 Graduate Students, 1897-8.
 [See Columbia Courses marked B, and Courses
 in Teachers' College (Columbia).]

BROWN.

- 24 Graduate Students, 1897-8.
E. B. DELABARRE, Assoc. Prof. of Psy-
 chology.
 A.M., Harv., '89; Ph.D., Freiburg, '91.
 *Psychol. Lab. iii, 10, Ap.-Jun.
 Psychol. Research. iii, 33.
 Seminary. iii, 33.
WALTER B. JACOBS, Assoc. Prof. of
 Pedagogy.
 A.B., Brown, '82, and A.M., '85; Instr. in
 Pedag., '94-6.
 *Institutes of Pedagogy. iii, 11, Ja.-
 Mar.
 *Practical Pedagogy. iii, 10, Ap.-Jun.
 Sem. in Pedagogy. ii, 33.
 Sem. in Methods. ii, 33.
 Problems in Practical Teaching. i, 33.
CHAS. E. DENNIS, Jr.
 A.B., Brown, '88, and A.M., Ph.D., same.
 *Hist. of Educa. Theories and Institu-
 tions. iii, 12, S.-D.
 (Also assists Prof. Jacobs.)

BRYN MAWR.

- 7 Graduate Students, 1897-8

- JAMES H. LEUBA**, Assoc. (elect) in
 Psychol. and Pedagogy.
 B.S., Neuchatel, Switzerland, '86; Ph.B.,
 Ursinus College, '88; Schol. in Psychol., Clark
 Univ., '92-3; Fel. in Psychol., Clark, '93-5;
 Ph.D., Clark, '96
 *Psychology. ii, 30.
 Psychological Seminary. ii, 30.
 Laboratory work. ii, 30.
 Pedagogy. The great Educators and
 their Systems. ii, O-F.
 Modern Educational Methods. ii, F-
 Jun.
 Practice Courses and Seminary.

CALIFORNIA.

- 18 Graduate Students, 1897-8.

- ELMER E. BROWN**, Prof. of Science and
 Art of Teaching.
 Ph.D., Halle.
 *Theory of Education. iv, 16, Au-D.
 Probs. in Education. Sem. ii, 32.
THOMAS P. BAILEY, Jr., Asst. Prof. of
 Science and Art of Teaching.
 Ph.D., South Carolina.
 Development of Character. iii, 32.
 Child Life. Sem. ii, 32.

California — continued

FLETCHER B. DRESSLAR, Asst. Prof. of Science and Art of Teaching.
Ph.D., Clark.
Genetic Studies. Sem. ii, 32.

CHICAGO.

41 Graduate Students (in Pedag.), 1897-8; 78 in Summer Quarter, '97.

1 Fellow.

JOHN DEWEY [see 7].
[Educational Psychol. iv, 6, Jul.-Au.]
*Method in Instruction. iv, 6, Jul.-Au.
Philosophy of Education. iv, 12, Ja.-Mar.

JAMES H. TUFTS [see 7].
Psychol. of Human Devel. iv, 6, Jul.-Au.

JULIA E. BULKLEY, Assoc. Prof. of Pedagogy.

Grad., Fort Edward Collegiate Inst., '67; Ph.D., Zürich, '95.

General Pedagogy. iv, 12, O.-D.
[Educational Theories. iv, 12, O.-D.]
Genetic Study of Educational Theories. iv, 12, Jul.-S.

Seminar. Herbart. ii 12, Jul.-S. Pestalozzi. ii, 12, O.-D. Froebel. ii, 12, Ja.-Mar. Spencer. ii, 12, Ap.-Jun.

Principles of Education. iv, 12, Ja.-Mar.

Educational Reformers. iv, 12, Ap.-Jun.

CHARLES H. THURBER, Assoc. Prof. of Pedagogy.

Ph.B., Cornell, '86; A.M., Haverford, '90; Instr. in French, Cornell, '91-3; Prof. of Pedagogy, Colgate, '93-5; Director Divis. of Child Study, Dept. of Public Instr., N. Y., '95; Sec'y Ill. Child Study Asso.

[Inductive Study of Education. iv, 6, Au.-S.]

Problems in Secondary Education. iv, 36, O.-Jun.

FRANK MCMURRY, Lect. in Ped.

Grad. of State Normal Univ. of Ill., '79; Ph.D., Halle, '90; Teacher Ill. State Normal School, '92-4; Prof. of Ped., State Univ. of Ill., '94-5; Dean of School of Ped., Univ. of Buffalo, '95-7.

*Special Methods. iv, 6, Jul.-Au.

*History of Education. iv, 6, Jul.-Au.

JAMES R. ANGELL, Asst. Prof. of Exper. Psychol.

A.B., Mich., '90, and A.M., '91; Instr. in Exper., Psychol., Minn., '93-4.

*[Intro. Psychol. iv, 12, O.D.]

*Exper. Psychol. iv, 24, O.-Mar.

[Relation of Psychol. to Philos. iv, 12, Ap.-Jun.]

Psychology. Laboratory course. iv, 6, Jul.-Au.

Spirit and Scope of Exper. Psychology. iv, 6, Jul.-Au.

Psychology. Research course. iv, 36, O.-Jun.

Advanced Psychology. iv, 12, Ap.-Jun.

GEO. H. MEAD [see 7].

Comp. Psychol. iv, 12, Ja.-Mar.

Methodology of Psychology. iv, 12, Ap.-Jun.

W. I. THOMAS [see 10].

Folk-psychology. iv, 12, O.-D., and Ap.-Jun.

Sex in Folk-psychology. iv, 12, Ja.-Mar.

[Hungarian and South Slavonian Ethnology and Folk-psychology. iv, 12, O.-D.]

ALBERT F. BUCK, Asst. in Psychol.

A.B., Amherst, '90; Student at Leipzig and Halle '92-3; A.M., Harvard '94; Instr. in Philos., Union College, '95-7.

*Experimental Psychology. iv, 24, O.-Mar.

Psychology. Research course. iv, 36, O.-Jun.

[Abnormal Psychology, Ap.-Jun.]

CLARK.

40 Graduate Students, 1897-8.

Two Fels. \$600 each, two \$400 each; two Schols. \$200 each, two \$100 each.

G. STANLEY HALL, Pres. and Prof. of Psychology.

A.B., Williams, '57, and A.M., '70; Ph.D., Harvard, '78; Lect. in Williams and Harvard, '80; Prof. of Psychology, Johns Hopkins, '81-8; LL.D., Mich., '88, and Williams, '89.

Hist. of Anc. Phil., beginning with Greek; special attention to Plato and Aristotle, and incl. the Philos. of Christianity and new Critical School. ii-iv, 35, O.-Jun.

Systematic Psychology; rel. to Neurology, Laboratory Work and Recent Genetic Studies. i-ii, 35, O.-Jun.

Education. The Ideal School. i, 35, O.-Jun.

EDMUND C. SANFORD, Asst. Prof. of Psychology.

A.B., California, '83; Fel., Johns Hopkins, '87; Ph.D., same, '88; Instr. in Psychology, same, '88; Instr. in Psychology, Clark, '89-'92.

Psychol. Practicum. Lab. and lects. iv, 35.

Psychol. Seminary. i, 35.

Original Research. Lab. 35.

Normal Psychol. Lects. and demonstrations. i, 35.

Pedagogical Tests and Measurements. Lab. i, 12, O.-Ja.

WILLIAM H. BURNHAM, Instr. in Pedagogy.

A.B., Harv., '82; Instr., Wittenberg, '82-3; Fel., Johns Hopkins, '85-6; Ph.D., same, '88; Instr. in Psychology, same, '88-9.

School Hygiene. i, 35, O.-Jun.

The Modern History of Education. i, 18, O.-Ja.

Present Problems in Education. i, 17, F.-Jun.

A. F. CHAMBERLIN, Lect. in Anthropology.

A.B., Toronto, '86, and A.M., '89; Fel. in Mod. Langs., Univ. Col., Toronto, '87-'90; Fel. in Anthropol., Clark, '90-2, and Ph.D., '92.

Gen. and Special Anthropol., Ethnol. and Ethnog., with esp. ref. to Psychol., Pedagogy and Child-Study. ii, 35.

ADOLF MEYER, Docent in Psychiatry.

M.D., Zürich, '92; Docent in Neurology, Chicago, '93-5; Pathologist and Neurologist, Worcester Lunatic Hospital, '95.

Psychiatric Problems with Clinical Demonstration; also an Anthropological Course. In all, 10 clinics, 2 hours each.

COLUMBIA.

28 Graduate Students, 1897-8.

[Courses marked B and Teachers' College Courses are open to Barnard Students.]

N. M. BUTLER [see 7].

B)Intro. to Psychol. iii, 30. (With Prof. Hyslop, Prof. Cattell, Prof. Starr, Dr. Farrand, Mr. Strong, Dr. Wilde.)

B)Principles of Education. i, 30.

B)Seminar. (Administration of Public Education in U. S.) i, 30.

JAMES MCK. CATTELL, Prof. of Experimental Psychology.

A.B., Lafayette, '80, and A.M., '83; Ph.D., Leipzig, '86; Fellow, Johns Hopkins, '82-3; Asst. Leipzig, '83-6; Lect. Univ. of Cambridge, '88; Lect. Univ. of Pa., '88; Prof. of Exper. Psychol., same, '88-'91.

B)Exper. Psychol. ii, 30.

B)Exper. Psychol. (adv.) ii, 30. (With Mr. Franz.)

Seminar. i, 30.

B)Anthropometry and Individual Psychol. ii, 30.

B)Research work in Exper. Psychol. v, 30.

MOSES A. STARR, Prof. in Col. Phys. and Surg.

Diseases of the Mind and Nervous System. i, 30.

LIVINGSTON FARRAND, Instr. in Physiology. Psychol.

A.M., Princeton, '91; M.D., Columbia, '91.

B)Physiological Psychol. iii, 30.

B)Abnormal and Pathological Psychol. i, 16, O.-F.

CHARLES A. STRONG, Lecturer.

A.B., Rochester, '84; Instr. in Philos., Cornell, '87-9; Docent, Clark, '90-1; Assoc. Prof. Philos. Chicago, '91-5; Assoc. Prof. Psychol., same, '95-6.

B)General Psychol. ii, 30.

JOHN F. WOODHULL, Pres. of Teachers' Col. and Prof. of Physical Science.

B)Methods of Teaching Science. iii, 30.

JOHN E. RUSSELL, Prof. of Psych. and General Method in Teachers' College.

A.M., Cornell, '87; Ph.D., Leipzig, '94; Prof.

Columbia — continued

of Phil. and Pedagogy, Univ. of Colo., '95-7; Prof. of Hist. '97, and Dean '98, Teachers' College; European Com. of Regents of Univ. of State of New York, '93-5; Agent Bureau of Educ., Washington, '93.

Hist. of Education. iii, 30.

[Comp. Study of Educational Systems.]

Secondary Education. ii, 30.

Seminar. (Training for Citizenship.)

FRANK MORTON MCMURRY, Prof. of Theory and Practice of Teaching, in Teachers' College.

Ph.D., Jena, '89; Prof. of Pedagogics and Training, Teachers' State Normal School, Ill., '91-2; Prof. of Pedagogy, Univ. of Ill., '93-4; Prin. Franklin School, Buffalo, '94-5; Prof. of Pedagogics in Teachers' col. Univ. of Buffalo, '95-8; Columbia, '98.

Observation and Practice in Teaching. iii, 30.

General Method. iii, 16, O.-F.

Seminar. (The Curriculum of the Elementary School.)

CHARLES B. GILBERT, Prof. of School Supervision and Management in Teachers' College.

A.B., Williams, '76; High School Principal, '78-'89; Supt. School St. Paul, Minn., '89-'96; Supt. Schools, Newark, N. J., '96.

School Supervision and Management.

FRANCIS E. LLOYD, Assoc. Prof. of Biological Science, in Teachers' College.

A.M., Princeton, '95; Asst. in Biology, Williams, '91-2; Prof. of Biology and Geology, Pacific Univ. Oregon, '92-5; Prof. of Biology, same, '95-7; Botanist of Sumbolst Expedition to Mexico, '92; Botanist Columbia College Expedition to Puget Sound, '96.

Methods of Teaching Biology. iii, 30.

FRANK T. BAKER, Prof. of Education, in Teachers' College.

A.M., Dickinson College, '89; Teacher of Greek, Mathematics and English, '85-'92; Instr. in English and Mathematics, Horace Mann School, '92-3; Prof. of English Lang. and Lit., '93.

Methods of Teaching English in Secondary Schools. iii, 30.

Methods of Teaching English in Primary Schools. iii, 30.

Methods of Teaching Greek in Secondary Schools. iii, 30.

RICHARD E. DODGE, Prof. of Geogr., in Teachers' College.

A.M., Harvard, '94; Asst. in Geol., Harvard, '91-4; Instr. same, '94-5; Instr. in Geol. and Geogr. Teachers' College, '95-6; Assoc. Prof. of Nat. Science, same, '96-7; Prof. of Geogr. '97.

Methods of Teaching Geogr. and Geol. iii, 30.

EDWARD H. CASTLE, Prof. of Hist. in Teachers' College.

A.M., Harvard, '94; Instr. in Hist. Horace Mann School, '94-6; Assoc. Prof. of Hist., same, '96-7; Prof. of Hist. '97.

Methods of Teaching Hist. in Secondary Schools. iii, 30.

Methods of Teaching Hist. in Primary Schools. iii, 30.

KATHARINE MOORE COCHRAN, Prof. of Latin and Greek, in Teachers' College.

A.B., Vassar, '90; Instr. in Latin and Greek, Albion New York High School, '90-4; Instr. in Latin and Math., Horace Mann School, '94-5; Instr. in Latin and Greek, same, '95-8.

Methods of Teaching Latin in Secondary Schools. iii, 30.

CHARLES R. RICHARDS, Prof. of Manual Training, in Teachers' College.

Graduate of Mass. Inst. of Tech., '85; Teacher of Man. Train., Indust. Educ. Assoc. '87-8; Prof. of Man. Train. and Director of Mechanic Arts Dept., Pratt Inst., '88-'98; Prof. of Man. Train., Teachers' Col., '98.

Methods of Teaching Manual Training in Elementary and Secondary Schools. iii, 30.

CHARLES E. BIKLÉ, Assoc. Prof. of Mathematics in Teachers' College.

A.M., Dickinson Col. '89; Instr. in Math., Dickinson, '90-2; Instr. in Horace Mann School, '93-7; Assoc. Prof. of Math. Teachers' Col. '97.

Methods of Teaching Math. in Secondary Schools. iii, 30.

Methods of Teaching Math. in Elementary Schools. iii, 30.

CORNELL.

18 Graduate Students, 1897-8.

Psychol. Lab. specially endowed; 10 rooms; 4,000 ft. of floor space for experimental purposes. Equipped for research work.

E. BRADFORD TITCHENER, Prof. of Psychol. and Dir. of Psychol. Lab.

A.B., Oxford, '89; Ph.D., Leipzig, '92; A.M., Oxford, '94; Exten. Lect. in Biol., Oxford, '92.

*General Psychol. (el). iii, 12, S.-D.

*Exper. Psychol. iii, 32. (With Mr. Bentley and Assistant.)

Systematic Psychol. iii, 32. (With Mr. Bentley.)

Psychol. Sem. and Advanced Lab. Work. x, 32.

Psychol. Optics. i, 32.

CHARLES DE GARMO, Prof. of the Science and Art of Education.

Ill. State Normal Univ., '73; Jena, '83-4; Ph.D., Halle, '86; Prof. Mod. Langs., Ill. State Normal, '86-'90; Prof. of Psychol., Univ. of Ill., '90-1; President Swarthmore College, '91-8.

*Philosophy of Education. iii, 32.

*Psychologic Foundations of Education. Lectures, discussions, and text-book study. iii, 32.

*History of Education. ii, 32.

Seminary for the Science and Art of Education. ii, 32.

I. M. BENTLEY, Instr. in Psychology.

Psychological Theory. i, 20, Ja.-Jun.

HARVARD.

17 Graduate Students, 1897-8.

[Courses marked R are open to Radcliffe Graduate Students.]

Psychol. Lab. specially endowed. Ref. lib. of several hundred vols. Pedagogical Club.

WILLIAM JAMES, Prof. of Psychology.

M.D., Harv., '69; Ph.D., et Litt. D., Padua, '93; Instr. Anat. and Physiol., '72-6; Asst. Prof. Physiol., '76-'80; Asst. Prof. Philos., '80-5; Prof. Philos., '85-9.

R)Psychological Sem. Abnormal Psychol. Types of insanity, exceptional mental phenom. ii, 30.

HUGO MÜNSTERBERG, Prof. of Experimental Psychology.

Ph.D., Leipzig, '85; M.D., Heidelberg, '87; Instr., Freiburg, '88-'91; Asst. Prof. '91-2.

*Adv. Psychol. iii, 15, O.-Ja.

R)Psychological Lab. Investigations. (With Dr. MacDougal.)

ROBERT MACDOUGAL, Instr. in Philosophy.

A.B., McGill Univ., '90; A.M., Harv., '93; Morgan Fel., '94; Ph.D., '95; Walker Fel., '95-6; Instr. in Phil., Western Reserve, '96-8.

*Experimental Psychol. (el). Lects. ii, lab. iv, 15, O.-Ja.

*Experimental Psychol. (2d course). Lects. i, lab. vi, 15, F.-Jun.

PAUL H. HANUS, Asst. Prof. of the Hist. and Art of Teaching.

B.S., Mich., '78; Prof. Math., Univ. Col., '79-'86.

R)*Methods of Teaching Science in El. and Sec. Schools (with other instrs.). Ten exercises for each of seven subjs. ii, 30.

*Methods of Teaching Eng., Ger., French, Lat., Greek, Hist. (instr. by var. teachers). Ten exercises in each subj. ii, 30.

Pedag. Sem. i, 30.

LELAND STANFORD, JR.

8 Graduate Students, 1897-8.

FRANK ANGELL, Prof. of Psychol.

B.S., Vermont, '78; Ph.D., Leipzig, '91; LL.D., Vermont, '92; Asst. Prof. of Psychol., Cornell, '91-2.

*Adv. Psychol. ii, 32.

*Laboratory Work. iii, 32.

EDWARD H. GRIGGS, Prof. of Education.

A.B., Indiana, '80, and A.M., '90; Instr. in Eng. Lit., same, '89-'91; Prof. Gen. Lit., '92-3.

*Dante and the Mediæval Ideal. ii, 15, S.-D.

*[Goethe and the Spirit of Modern Culture. ii, 17, Ja.-My.]

*Ethical and Educational Study of Autobiography. iii, 42.

*[Ethical Activities of Childhood. iii, 32.]

Seminary in Hist. of Morals. iii, 32.

[Seminary in Ethical and Educational Theory. iii, 32.]

(NOTE.—Prof. Griggs will have leave of absence from Jan. 1, 1899 to Jan. 1, 1900. Courses scheduled for the first semester will be given during 1898-9; those scheduled for the second semester will be given in 1899-1900.)

Leland Stanford, Jr.—continued

EDWIN D. STARBUCK, Prof. of Education.

A.B., Indiana, '90; A.M., Harvard, '95; Ph.D., Clark, '97.

*Educational Psychol. ii, 32.

Seminary in Psychol. and Pedagogy of Religion. iii, 32.

ELLWOOD P. CUBBERLEY, Asst. Prof. of Education.

A.B., Indiana, '92; President Vincennes (Ind.) Univ., '92-6; Superintendent of Schools, San Diego, Cal., '96-8.

*Organization and Supervision of School Systems. ii, 17, Ja.-My.

Seminary in Statistical Study of School Systems. ii, 32.

E. L. PARSONS, Instr. in Hist. of Philosophy.

A.B., Yale, '89; Student, Berlin, '92-4.

*Seminary in Hist. of Philosophy. ii, 32.

MICHIGAN.

10 Graduate Students, 1897-8.

B. A. HINSDALE, Prof. of Sci. and Art of Teaching.

A.M., Bethany, and Williams, '71; Ph.D., Ohio State Univ., '84; LL.D., Ohio Univ., '92; Pres., Hiram, '70-'82.

Theory and Practice of Teaching. iv, 34.

Hist. of Education. iii, 34.

School Supt. iii, 17, O.-F.

Comp. Study of Educational Systems, iii, 17, F.-Jun.

Seminary. i, 17, F.-Jun.

WALTER B. PILLSBURY, Instr. in Psychology.

A.B., Nebraska, '91; Scholar in Philos., Cornell, '93-5; Asst. in Psychol., same, '95-7, and Ph.D., same, '96.

*Beginners' Exp. Psychol. ii, 34.

*Second Course in Exp. Psychol. ii, 34.

Genetic Psychol. ii, 17, O.-F.

*General Psychol. ii, 17, F.-Jun.

Original Invest. in Exp. Psychol. iii, 34.

Seminary in Psychol. ii, 34.

MINNESOTA.

7 Graduate Students, 1897-8.

HARLOW GALE, Instr. in Psychology.

A.B., Yale, '85; Grad. Student, University of Minn., and Yale, '85-9; Grad. Student, Camb. Eng., '89-'90; Leipzig, '90-2; Berlin, '92-3; Leipzig, '93-4.

*Psychical Research; Hypnotism and Insanity. iv, 12.

Exper. Psychology of Feeling in Music, Color, Proportion, Motion, and Conduct. iv, 36.

Exper. Psychology of Reasoning. iv, 12.

Exper. Psychology of Childhood. iv, 12.

Readings in Ger., Fr. and Ital. Psychological Works. i, 36.

Brain Histology, and Microphotography. iv, 36.

DAVID L. KIEHLE, Prof. of Pedagogy.

A.B., Hamilton, '61; A.M., '64, and LL.D., '91.

*Philos. of Education. iv, 12.

*Comparison of School Systems. iv, 12, Mar.-Jun.

*History of Education. ii, 36.

Seminar in Educational Problems. i, 36.

NEW YORK.

3 Graduate Students, 1897-8.

The School of Pedagogy (53 Students in Psychol.) is distinct from the Graduate School, but the two courses in Exper. and Descript. Psychol. are identical in the two schools.

CHARLES B. BLISS, Prof. of Exper. Psychology.

A.B., Yale, '90, and Ph.D., '93; Lect. on Psycho-Physics, same, '93-4; Prof. of Exper. Psychol., New York, '94.

Exper. Psychology. iv, 30.

Research in Exper. Psychology.

[Abnormal Psychology. ii, 30.]

Hist. of Modern Psychol. ii, 30.

EDWARD F. BUCHNER, Prof. of Descriptive Psychology.

A.B., Western, '89; Ph.D., Yale, '93; Instr., Western, '89-'90; Lect. on Ped., Yale, '92-3; Instr. in Ped. and Philos., same, '93-7; Prof. of Descriptive Psychol., New York, '96.

Systematic Psychology. iv, 30.

NORTHWESTERN.

1 Graduate Student, 1897-8.

HERBERT F. FISK, Prof. of Pedagogics.

A.B., Wesleyan, '60; A.M., '63, and D.D., '88.

*Hist. of Education. ii, 36.

*[Principles of Educa. iii, 36.]

PENNSYLVANIA.

41 Graduate Students, 1897-8.

1 Fel. in Pedagogy \$500 + tui (see also 7); 1 Schol., (see 9).

WM. ROMAINE NEWBOLD (see 7).

Cognition, Thought and Will. ii, 30.

Fundamental Concepts. of Psychol. ii, 30.

LIGHTNER WITMER, Asst. Prof. of Psychol.

A.B., Univ. of Pa., '88; Ph.D., Leipzig, '91; Asst. in Exper. Psychol., '89-'91; Lectr. in Exper. Psychol., '91-4.

Physiol. Psychol. ii, 15, O.-F.

Sensation and Perception. ii, 15, F.-My.

Complex Mental Processes. ii, 15, O.-F.

Exper. Psychol. ii, 15, F.-My.

Mod. Psychol. Theory. i-ii, 30.

Select. Themes in Exper. Psychol. Lab. and Sem. i-ii, 30.

Sem. Child Psychol. i-ii, 30.

Laboratory Work.

MARTIN G. BRUMBAUGH, Prof. of Pedagogy.

M.S., Juniata Col., A.M., Univ. of Pa., '93, and Ph.D., '94; Pres. Juniata College.

[Institutes of Educa. ii, 30.]

Hist. of Educa. ii, 30.

Educa. Systems and Ideals. ii, 30.

Educa. Sem. i, 30.

PRINCETON.

18 Graduate Students, 1897-8.

Psychol. Lab. for pract. work. Special ref. lib. in connection.

J. M. BALDWIN, Prof. of Exper. Psychol.

A.B., Princeton, '84, and Ph.D., '86; Prof., Lake Forest, '87-8; Prof., Toronto, '89-'93.

*Exper. Psychology. ii, 36.

*Gen. Psychology. ii, 36.

Exper. Psychol. Research. 36.

Seminary. Social and Genetic Psychology. i, 36.

H. C. WARREN, Asst. Prof. of Exper. Psychol.

A.B., Princeton, '89, and A.M., '91.

Theory of Mental Measurements. ii, 18, S.-Ja.

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*Comp. Const. Law. iii, 18, F.-Jun.

PAUL S. REINSCH, Instr. in Polit. Science.

A.B., Wis., '92; LL.B., '94; Ph.D., '98.

*Rom. Law. ii, 18, S.-F.

*Hist. of Polit. Thought. ii, 36, S.-Jun.

*Intro. to Hist. of European Law. ii, 18, F.-Jun.

*Hist. of Eng. and Am. Law. iii, 18, S.-F.

*Comparative Jurisprudence. ii, 18, F.-Jun.

*Seminary in Polit. Philos. i, 36, S.-Jun.

SAMUEL E. SPARLING, Asst. in Public Administration.

A.B., Indiana, '92; Ph.D., Wis., '96.

*Elements of Administration. ii, 18, S.-F.

*Comparative Administration. iii, 18, S.-F.

*Federal and State Administration. ii, 18, F.-Jun.

*Mun. Govt. in Europe and U. S. iii, 18, F.-Jun.

*Hist. of Fed. Administration. ii, 36, S.-Jun.

YALE.

34 Graduate Students, 1897-8.

Historical Seminary is conducted by professors of history. Hist. Sem. room fitted up with Library. Polit. Science Club meets fortnightly.

W. H. BREWER (see 17).

Physical Geog. in its Relat. to Hist. i, 10, Mar.-Jun.

A. M. WHEELER, Prof. of Hist.

A.B., Yale, '57, and A.M., '87; LL.D., Hamilton, '96.

Hist. of Treaties, 1763-1815. i, 32.

[Hist. of Institutions. ii, 32.]

*Hist. of Europe since 1789. ii, 32.

Special topics in Europ. Hist., 1789-1815. i, 32.

Const. Hist. England since 1760. i, 32.

C. H. SMITH, Prof. of Am. History.

A.B., Yale, '65; LL.D., Bowdoin, '94; Prof. Math., Hist., and Pol. Sci., Bowdoin.

Am. Hist., Parties to 1850. ii, 32.

Am. Hist., Slavery. ii, 32.

Am. Hist., Const. i, 32.

G. B. ADAMS, Prof. of History.

A.B., Beloit, '73; Ph.D., Leipzig, '86; Prof. Hist. and Eng. Lit., Drury Col.

*Mediaeval Hist. ii, 32.

Mediaeval Institutions. ii, 32.

*Eng. Const. Hist. ii, 32.

E. G. BOURNE, Prof. of History.

A.B., Yale, '83, and Ph.D., '92; Instr. in Hist. and Lect. on Pol. Science, same, '86-8; Instr. in Hist., Adelbert, '88-'90; Prof. of Hist., West. Res., '90-5.

Methods of Hist. Research and Criticism. i, 32. (With G. B. Adams.)

[Sources and Lit. of Am. Hist. i, 20, Ja.-Jun.]

[Europ. Colonies in Am. ii, 32.]

*Am. Colonial Hist. ii, 32.

*Am. National Hist. ii, 32.

Mod. Europ. and Eng. Historiography. i, 20, Ja.-Jun.

Diplomatic Hist. of U. S. ii, 32.

O. H. RICHARDSON, Asst. Prof. of Hist.

A.B., Yale, '89; Ph.D., Heidelberg, '97.

Eng. Hist. from Accession of Tudors to Wm. and Mary. ii, 32.

Renaissance and Reformation. i, 32.

*Eng. Polit. Hist.

*Hist. of Europe from Ref. to Fr. Rev. ii, 32.

F. W. WILLIAMS, Instr. in Hist.

A.B., Yale, '79.

*Anc. Oriental Nations. ii, 32.

*Modern Asiatic History. ii, 32.

*Med. Asia and Mohammedan Conquest. ii, 32.

Yale — continued

G. P. FISHER, Prof. of Eccles. Hist.

A.B., Brown, '47; D.D., same, '66, Edin., '86; and Harv., '86; A.M., Yale, '67; LL.D., Princeton, '79.

General Church Hist. iii, 32.

F. STRONG, Lect. in Hist.

Ph.D., Yale, '97.

Social and Econ. Hist. of U. S. from 1830-76. i, 32.

Hist. of Eng. dur. Commonweath and Protectorate. i, 32.

E. J. PHELPS, Prof. of Law.

A.B., Middlebury, '40; A.M., Yale, '81; LL.D., Middlebury, '70, Vermont, '87, and Harv., '89.

*Law, Am. Const. and International. ii, 20, Ja.-Jun.

E. G. BUCKLAND, Asst. Prof. of Evidence.

A.B., Washburn (Kan.), '87; LL.B., Yale, '89, and A.M., '95.

*Jurisprudence. ii, 12, O.-D.

G. L. FOX, Lect. on Munic. Admin.

A.B., Yale, '74, and LL.B., '79; A.M., '85.

Comp. Municipal Govt. i, 32.

10. ECONOMICS, SOCIOLOGY, ANTHROPOLOGY, AND ETHNOLOGY.

(Including Finance and Statistics. See also 9 and 11.)

BARNARD.

16 Graduate Students, 1897-8.

[All Graduate Courses in Columbia under 10 open to Barnard Graduate Students.]

BROWN.

8 Graduate Students, 1897-8.

HENRY B. GARDNER, Assoc. Prof. of Pol. Econ.

A.B., Brown, '84, and A.M., '87; Ph.D., Johns Hopkins, '90; Instr. in Pol. Econ., Brown, '88-'90.

*Hist. of Economic Thought. iii, 12, S.-D.

Economic Policy. iii, 12, S.-D.

*Money and Banking. iii, 11, Ja.-Mar.

*Public Finance. iii, 10, Ap.-Jun.

*Practical Economic Questions. iii, 12, S.-D.

Economic Theory (adv.) iii, 11, Ja.-Mar.

GEORGE G. WILSON, Prof. of Social and Pol. Science.

A.B., Brown, '86, A.M., '88, and Ph.D., '89; Assoc. Prof. of Social and Pol. Science, '91-5.

*Princ. of Sociol. iii, 12, S.-D.

*Social Conditions and Probs. iii, 21, Ja.-Jun.

Current Social Theory and Practice. i, 33.

Sociology. Seminary. Fort.

JAMES Q. DEALEY, Asst. Prof. of Social and Pol. Science.

A.B. Brown, '90, A.M., '92, and Ph.D., '95.

Devel. of Social Theory. iii, 12, S.-D.

Social Philos. iii, 11, Ja.-Mar.

[Segregation of Population. iii, 10, Ap.-Jun.]

ALPHEUS S. PACKARD (see 17).

*Anthropology. iii, 10, Ap.-Jun.

BRYN MAWR.

3 Graduate Students, 1897-8.

1 Fel. \$525 in Hist. or Political Science.

LINDLEY M. KEASBEY, Assoc. Prof. of Pol. Sci.

A.B., Harv., '88; Ph.D., Columbia, '90; Asst. in Econ., Columbia, and Lect. on Pol. Sci., Barnard, '92; R.P.D., Strassburg, '92; Prof. of Hist., Econ., and Pol. Sci., State Univ. of Col., '92-4.

Economic Institutions. i, 30.

Am. Primitive Society. i, 30.

Am. Commerce. i, 30.

*Descriptive Sociology. iii, 30.

*Theoretical Sociology. ii, 30.

CALIFORNIA.

1 Graduate Student, 1897-8.

BERNARD MOSES (see 9).

*Economic Theory. iv, 16, Ja.-My.

[Econ. Condition of Laborers in Eng. ii, 16, Au.-D.]

CARL C. PLEHN, Assoc. Prof. of Hist. and Pol. Science.

A.B., Brown; Ph.D., Göttingen.

[Federal Expenditures, Revenues and Debts. ii, 32.]

Industrial and Commercial Hist. of U. S. ii, 32.

[Currency and Banking. ii, 32.]

*Finance and Taxation. iv, 16, Ja.-My.

*Statistics. Hist., Theory, and Method, as applied to Econ. Investigation. ii, 16, Au.-D.

*Local Govt. and Admin. — ?

CHICAGO.

⁴⁰ Graduate Students, 1897-8; and 40 in Summer Quarter, '97, in Political Economy; 55 Graduate Students, 1897-8; and 95 in Summer Quarter, '97, in Sociology.

Pol. Econ., Club and Social Science Club fortnightly. Dept. libs. of Pol. Econ., Sociol. and Anthropol. have leading magazines and 6,000 vols. In Anthropol. Dept. of Walker Museum, coll. of 3,000 pieces on Archaeol. of Mexico, valuable colls. on Cliff and Cave Dwellings, and Japan and Aleutian Islands; also complete anthropometrical apparatus. Access to the Field Columbian Museum. 6 Fels. in Pol. Econ. 4 in Sociol. 1 Fel. in Anthropol.

J. LAURENCE LAUGHLIN, Head Prof. of Pol. Econ.

A.B., Harv., '73; A.M., and Ph.D., '76; Instr. in Pol. Econ., same, '83-8; Prof. Pol. Econ. and Finance, Cornell, '90-2.

Money and Banking. iv, 12, Jul.-S. Seminar. ii, 12, O.-D.

Money. iv, 12, Ja.-Mar.

Seminar. ii, 12, Ja.-Mar.

Unsettled Problems. iv, 12, Ap.-Jun.

Seminar. ii, 12, Ap.-Jun.

BERNARD MOSES, Prof. of History and Political Economy, Univ. of Cal.

Ph.B., Univ. of Mich., '70; Ph.D., Heidelberg, '73; Prof. of History and Engl. Lit., Albion Col. '75; Prof. of Hist. Univ. Cal. '75-6; Prof. Hist. and Pol. Econ. Univ. Cal. '76.

*Practical Economics. iv, 12, Jul.-S., and O.-D.

Advanced Course on Theory. iv, 12, Jul.-S., and O.-D.

ADOLPH C. MILLER, Prof. of Finance.

A.B., California, '87; A.M., Harv., '88; Instr. in Pol. Econ., Harv., '89-'90; Lect. on Pol. Econ., California, '90-1, and Asst. Prof.-elect of Hist. and Pol. Sci., same, '91; Assoc. Prof. Pol. Econ. and Finance, Cornell, '91-2; Assoc. Prof. Pol. Econ., Chicago, '92-3.

[Public Finance. iv, 12, O.-D.]

[Economic and Social Hist. iv, 24, Ja.-Jun.]

*Public Finance. iv, 12, Ja.-Mar.

*Financial Hist., U. S. iv, 12, Ap.-Jun.

*[Pol. Econ (adv). iv, 12, Ap.-Jun.]

[Taxation. iv, 12, Ja.-Mar.]

Seminar in Finance. ii, 12, Ja.-Mar.

WILLIAM HILL, Asst. Prof. of Pol. Econ.

A.B., Kansas, '90; A.B., Harv., '91, and A.M., '92; Fellow, Harv., '91-3; Instr. Pol. Econ., same, '93; Tutor Pol. Econ., Chicago, '93-4; Instr., same, '94-7.

*Tariff Hist. iv, 12, Ja.-Mar.

*Railway Transportation. iv, 12, O.-D.

*Oral Debates. ii, 24, O.-Mar. (With Messrs. Damon and Lovett.)

*Comparative Railway Legislation. iv, 12, Ja.-Mar.

*Banking. iv, 12, Ap.-Jun.

Money and Banking. iv, 12, O.-D.

THORSTEIN B. VEBLEN, Instr. in Pol. Econ.

A.B., Carleton, '80; Ph.D., Yale, '84; Fellow in Economics and Finance, Cornell, '91-2; Fellow, Chicago, '92-3; Reader in Pol. Econ., same, '93-4; Tutor, same, '94-6.

*Hist. of Pol. Econ. iv, 12, O.-D.

*Scope and Method of Pol. Econ. iv, 12, Ja.-Mar.

Socialism. iv, 24, Ja.-Jun.

American Agriculture. iv, 12, Ap.-Jun.

Economic Factors of Civilization. iv, 12, Ap.-Jun.

HENRY RAND HATFIELD, Instr. in Pol. Econ.

A.B., Northwestern, '92; Ph.D., Chicago, '97; Prof. of Pol. Econ. Washington Univ., '95-7.

*Railway Accounts, Exchanges, etc. iv, 12, O.-D.

Processes of Leading Industries. iv, 12, Ja.-Mar.

*Coöperation. iv, 12, Ap.-Jun.

Chicago — continued**A. W. SMALL, Head Prof. of Sociol.**

A.B., Colby, '76, and A.M., '79; Prof. Hist. and Pol. Econ., Colby, '81-8; Reader in Hist., Johns Hopkins, '88-9; Ph.D., same, '89; Pres., Colby, '89-'92.

Social Teleology. iv, 12, Ja.-Mar.

Sociol. Methodology. viii, 6, Jul.-Au., and iv, 12, O.-D.

[Philos. of Soc. iv, 12, O.-D. State and Govt., Ja.-Mar. Socialism, Ap.-Jun. Social Functions U. S. Govt. iv, 6, Jul.-Au. Contemp. Soc., Jul.-Au.]

[Sem. Probs. in Social Teleology. ii, 36, O.-Jun.]

Social Dynamics. iv, 12, Ap.-Jun.

[Historical Sociology. iv, 12, Ja.-Mar.]

[Outlines of Constructive Social Philos. Philos. of Society. iv, 12, O.-D.

The Social Problem. iv, 12, Ja.-Mar.

Philos. of State and Govt. iv, 12, Ap.-S.]

[Seminar. Problems of Social Dynamics. ii, 36, O.-Jun.]

Seminar. Problems in Methodology and Classification. ii, 36, O.-Jun.

[Am. Experience with State Control of Social Action. iv, Ja.-Mar.]

Controlling Ideas of Modern Society. iv, 12, Ap.-Jun., and iv, 6, Jul.-Au.

[Some Pending Problems in Sociology. iv, 6, Jul.-Au.]

[The Sociological Method of Stating the Social Problem and of Arranging Evidence, Applied to a Selected Hist. Period. iv, 6, Jul.-Au.]

[Comparative Study of Social Forces in Am. and French Democracy. iv, 6, O.-D.]

C. R. HENDERSON, Assoc. Prof. of Sociol.

A.B., Old Univ. of Chicago, '70, and A.M., '73; D.B. Baptist Union Theol. Sem., '73; D.D., same, '83; Assist. Prof. Sociol., Chicago, '92-4.

Methods of Social Amelioration. Sem. ii, 36, O.-Jun.

[The Domestic Inst. iv, 12, O.-D.]

Associations for Sociability and Culture. iv, 12, O.-D.

[Social Reform. iv, 12, Ja.-Mar.]

[Beneficent Forces of Cities. iv, 12, Ja.-Mar.]

Social Inst. of Organized Christianity. iv, 12, O.-D.

Social Treatment of Crime. iv, 6, Au.-S.

[Bibl. and Eccles. Social Theories. iv, 12, Ja.-Mar.]

[Field Work in Local Institutions of Charity and Correction. iv, 12, Ap.-Jun.]

*The Family. iv, 12, O.-D.

*The Labor Movement. iv, 12, Ja.-Mar. Amelioration of Rural Life. iv, 6, Jul.-Au.

Modern Cities. iv, 12, Ja.-Mar.

Contemporary Charities. iv, 12, Ap.-Jun.

Philanthropy. iv, 12, Ap.-Jun.

MARION TALBOT, Assoc. Prof. of Sanitary Science.

A.B., Boston Univ. '80, and A.M., '82; B.S., Mass. Inst. of Technology, '88; Instr. Domestic Science, Wellesley, '90-2.

*General Hygiene. iv, 12, Ap.-Jun.

*Seminar. Sanitary Science. iv, 36, O.-Jun.

*House Sanitation. iv, 12, O.-D.

Economy of Living. iv, 12, Ap.-Jun.

Sanitary Aspects of Water, Food, and

Clothing. iv, 12, Ja.-Mar.

CHARLES ZUEBLIN, Assoc. Prof. of Sociol.

Ph.B., Northwestern, '87; D.B., Yale, '89.

Social Philos. of Eng. People in the Victorian Era. iv, 12, Ap.-Jun. and Jul.-S.

*Structure of Eng. Society. iv, 12, Ap.-Jun. and Jul.-S.

G. E. VINCENT, Asst. Prof. of Sociology.

A.B., Yale, '85; Vice-Principal, Chautauqua System, '88-pr; Fellow in Sociology, Chicago, '92-4; Ph.D., Chicago, '96.

Course in Statistics.

[Province of Sociol. iv, 12, O.-D.]

[Social Structure. iv, 12, Ja.-Mar.]

The Social Mind and Education. iv, 12, Ap.-Jun.

*Contemporary Society in the U. S. iv, 12, O.-D.

*Am. City Life. iv, 12, Ja.-Mar.

**Introd. to Study of Society.* iv, 12, Ap.-Jun.

**Introd. to Sociology,* iv, 12, O.-D.
The Theory of the Social Mind. iv, 12, Ja.-Mar.

W. I. THOMAS, Asst. Prof. of Sociol.

A.B., Univ. of Tenn., '84; A.M., '85; Prof. of English, Oberlin, '89-'93; Fellow in Sociol., Chicago, '93-'4; Ph.D., Chicago, '96; Instr. in Folk-psychology, Chicago, '95-'6.

Folk-psychol. iv, 12, O.-D., and Ap.-Jun.

[*Primitive Social Control.* iv, 12, O.-D. Seminar.]

[*Art and Amusement in Folk-psychol.* iv, 12, Ja.-Mar. Sex. Ap.-Jun.]

[*Analogy and Suggestion in Folk-psychol.* iv, 12, Ja.-Mar. *The Child.* Ap.-Jun.]

*[*Intro. to Study of Soc.* iv, 12, Jul.-S.]
Ethnological Æsthetic. iv, 12, Ap.-Jun.

The Primitive Social Mind. iv, 12, Ja. Mar.

Sex in Folk-psychology. iv, 12, Ja.-Mar.

[*Hungarian and South Slavonian Ethnology and Folk-psychol.* iv, 12, O.-D.]

Primitive Social Control. iv, 12, O.-D.

LESTER F. WARD, Professorial Lecturer in Sociol., Smithsonian Institution.

A.B., Columbia, '69; LL.B., same, '71; A.M., '73; LL.D., '97.

Dynamic Sociology. iv, 4, Au.-S.

Social Mechanics. vi, 4, Au.-S.

HENRY W. THURSTON, Instr. in Econ. and Civics, Hyde Park High School.

A.B., Dartmouth, '86.

A Method of Applying Sociological Pedagogy to the Teaching of Economics in Secondary Schools. iv, 6, Jul.-Au.

FREDERICK STARR, Assoc. Prof. of Anthropology.

S.B., Lafayette, '82; S.M. and Ph.D., '85; Prof. Biological Sciences, Coe Col., '84-'8; in charge Dept. Ethnology, Am. Mus. of Natural Hist., '89-'91.

Lab. Work in Anthropology. iv, 36, O.-Jun.

Physical Anthropol. Lab. iv, 36, O.-Jun.

[*Physical Anthropol.* iv, 12, O.-D.]
Mexico Archæology, Ethnology. iv, 12, Jul.-S.

**General Anthropol.* iv, 12, Ap.-Jun.
Ethnology American Race. iv, 12, Jul.-S.

Prehistoric Archæology. American. iv, 12, O.-D.

[*Field Work in Anthropol. Mexico.* Jul.-S.]

Prehistoric Archæol. European. iv, 12, O.-D.

**General Ethnology.* v, 12, Jul.-S.

**General Anthropology.* iv, 6, Jul.-Au.
Ethnology American Race. iv, 6, O.-N.

Mexico. Archæology, Ethnology. iv, 6, Au.-S.

[*Comparative Technology.* iv, 36, O.-Jun.]

MERTON LELAND MILLER, Lecturer in Anthropology.

A.B., Colby Univ., '90; Instr. Eureka Acad., '92; Grad. Stud. at Chicago, '92-'7; Asst. in Anthropol. Mus., '94-'7; Ph.D., Chicago, '97.

The Peoples of Europe. iv, 6, O.-N.

Physical Anthropology. Laboratory Work. iv, 36, O.-Jun.

J. H. BREASTED (see 1).

Egyptian Life and Antiquities. iv, 12, Ap.-Jun.

C. H. HASTINGS.

A.B., Bowdoin, '91.

Bibliography of Sociology. iv, 6, Au.-S.

COLUMBIA.

63 Graduate Students, 1897-8.

[All graduate courses under 10 open to Barnard Graduate Students.]

RICHMOND MAYO-SMITH, Prof. of Pol. Econ. and Social Science.

Ph.D. (hon.), Amherst.

**Pol. Econ. (el).* iii, 14, F.-Jun. (With Mr. Day.)

Pract. Pol. Econ:

(a) *Problems of Mod. Industry.* iii, 16, O.-F.

Columbia—continued

- (b) Problems of Exchange. iii, 14, F.-Jun.
 (c) Problems of Distribution. iii, 14, F.-Jun.
 (d) Readings in Marshall's "Prin. of Econ." i, 30.
 Statistics and Sociology. ii, 16, O.-F.
 Statistics and Economics. ii, 14, F.-Jun.
 Theory, Technique, and Hist. of Statis. Sci. ii, 14, F.-Jun.
 Seminar. Statistics. i, 30.
 Seminar. Pract. Econ. i, 30.
- EDWIN R. A. SELIGMAN, Prof. of Pol. Econ. and Finance.
 LL.B., Ph.D., Columbia, '84.
 Econ. Hist. of Europe and America. ii, 16, O.-F. (With Mr. Day.)
 Sci. of Finance. ii, 30.
 Fiscal and Indus. Hist. of U. S. ii, 16, O.-F.
 Hist. of Economics. ii, 30.
 Railroad Problems. ii, 14, F.-Jun.
 [Hist. of Pol. Econ. ii, 30.]
 Seminar. Pol. Econ. and Finance. i, 30.
- JOHN B. CLARK, Prof. of Pol. Econ.
 Ph.D., Amherst, '75; Prof. Hist. and Pol. Econ., Carleton, '77-'82; Prof. of same, Smith, '82-'93; Lect. Johns Hopkins, '92-5; Prof. Pol. Econ., Amherst, '92-5.
 Econ. Theory. Statics. ii, 16, O.-F.
 Dynamics. ii, 14, F.-Jun.
 Communistic and Socialistic Theories. ii, 16, O.-F.
 Theories of Social Reform. ii, 14, F.-Jun.
 Seminar. Pol. Econ. i, 30.
- FRANKLIN H. GIDDINGS, Prof. of Sociology.
 A.M., Union.
 General Sociology. ii, 16, O.-F.
 Progress and Democracy. ii, 14, F.-Jun.
 Pauperism, Poor Laws, and Charities. ii, 16, O.-F.
 Crime and Penology. ii, 14, F.-Jun.
 Seminar. Sociology. i, 30.

WILLIAM Z. RIPLEY, Lect. on Anthropology.

B.S., Mass. Inst. of Tech., '90; A.M., Columbia, '92; Ph.D., Columbia, '93; Assoc. Prof. Pol. Econ. and Sociol., Mass. Inst. of Tech., '94-7; Lect., Hartford School of Sociology, '95-6.

Physical Geog. Anthropol. and Ethnology. ii, 16, O.-F.

LIVINGSTON FARRAND (see 7).

General Anthropology. ii, 14, F.-Jun.
 Anthropology. Primitive Culture. ii, 30.

FRANZ BOAZ, Inst. in Anthropol.

Ph.D., Kiehl, '81.

Phys. Anthropol. ii, 30.

Applica. of Statistical Methods to Biolog. Problems (adv.) iii, 30.

North Am. Langs. Seminar. ii, 30.

GEORGE J. BAYLES.

Ph.D., Columbia, '95.

Civil Aspects of Ecclesiastical Organizations. i, 30.

CORNELL.

14 Graduate Students, 1897-8.

J. W. JENKS (see 9).

*Economic Legislation. ii, 32.

*Economics and Politics.

CHARLES H. HULL, Asst. Prof. of Pol. Econ.

Ph.B., Cornell, '86; Ph.B., Halle, '92; Instr. in Pol. and Sociol. Institutions, Cornell, '92-3.

*Money, Credit, and Banking. iii, 32.

*Railroad Transportation. iii, 9, Ap.-Jun.

*Finance, Taxation, Admin. Public Debts. ii, 32.

*Recent Econ. Theory. Am., Eng., Continental. ii, 32.

*Earlier Econ. Theory (Prior to J. S. Mill). ii, 32.

Economic and Commercial Geography. ii, 23, O.-Mar.

Seminary. ii, 32. (See 9.)

CHAS. J. BULLOCK, Instr. in Economics.

A.B., Boston, '89; Ph.D., Wisconsin, '95.

*Industrial Hist., Eng. and Am. ii, 32.

- *Internat. Trade and Tariff Hist. U. S. ii, 32.
- *Labor Question. ii, 12, S.-D.
- *Hist. Trades Unions. ii, 11, Ja.-Mar.
- *Socialism. ii, 9, Ap.-Jun.

WALTER F. WILLCOX, Prof. of Social Science and Statistics.

A.B., Amherst; Ph.D., Columbia; Instr. in Philos., Cornell, '91-2; Asst. Prof. Social Science and Pol. Econ., '92-4.

- *Social Science (el). ii, 32.
- *Social Statistics. ii, 32.
- *[Theoretical Social Science (adv). ii, 32.]
- *Practical Social Science (adv). ii, 32.
- *[Anthropology. ii, 32.]
- *Philos. and Pol. Econ. ii, 32. •
- Seminary. ii, 32. (See 9.)

WM. E. BALDWIN, Pres. Long Island R. R.

A.B., Harvard, '85.

Pract. Railroad Management. Lects. i-ii, Ja.-Mar.

CHARLTON T. LEWIS, Counsel Mutual Life Ins. Co.

Principles of Insurance. Lects. i, 15, —?

B. F. FERNOW, Director of Col. of Forestry.

Grad. State Col. of Forestry, Münden, Prussia; Chief of Dir. of Forestry, U. S. Dept. of Agric., '86-'92; LL.D., Wisconsin.

Forestry: Econ and Pol. Aspects. ii, 21, Ja.-Jun.

HARVARD.

21 Graduate Students, 1897-8.

(Courses marked R are open to Radcliffe Graduate Students.)

Fel. in Pol. Econ., \$450; in Soc. Sci., \$500; in Archæol. and Ethnol., \$500 and \$1,050, and Schol. of \$200. Prize of \$150 for Essay in Pol. Sci., two of \$100 each for essays on social questions. Peabody Mus., Am. Archæol., and Ethnol., with Lib., is intended for research.

CHARLES F. DUNBAR, Prof. of Pol. Econ.

A.B., Harv., '51; LL.D., same, '91.

- *Financial Legislation of U. S. ii, 15, F.-Jun.

- *[Financial Admin. and Pub. Debts. iii, 15, F.-Jun.]

*Money and Banking. v, 15, O.-Ja. Seminary. Economics. i, 30. (With Prof. Taussig and Asst. Prof. Cummings.)

FRANK W. TAUSSIG, Prof. of Pol. Econ. A.B., Harv., '79; Ph.D., '83, and LL.B., '86.

- *Econ. Theory in the 19th Cent. iii, 30. (With Prof. MacVane.)
- *[Theory and Methods of Taxation. Special ref. to U. S. Local Taxation. ii-iii, 15, O.-Ja.]
- *Scope and Method of Economic Theory and Investigation. ii-iii, 30.

WILLIAM J. ASHLEY, Prof. of Econ. Hist.

A.B., Oxford, '81, and A.M., '85; Fel., Lincoln Col., and Lect.-on Hist., Lincoln and Corpus Christi Col., Oxford, '85-8; Prof. Pol. Econ. and Const. Hist., Toronto, '88-'92.

- *[Mediaeval Economic Hist. of Europe. ii-iii, 30.]
- *[Hist. and Lit. of Economics to close of 18th Cent. ii-iii, 30.]

EDWARD CUMMINGS, Asst. Prof. of Sociology.

A.B., Harv., '83; A.M., same, '85.

- *Princ. of Sociology. Devel. of Modern State. ii-iii, 30.
- *Socialism and Communism. ii-iii, 30.
- *Labor Question in Europe and U. S. iii, 30. (With Dr. John Cummings.)

JOHN CUMMINGS, Instr. in Pol. Econ.

A.B., Harv., '91; Ph.D., Chicago, '94.

- *Theory and Methods of Statistics. iii, 30.

H. R. MEYER, Instr. in Pol. Econ.

A.B., Harv., '92; A.M., '94.

- *Public Works, Railways, etc., under Corporate and Pub. Management. iii, 15, F.-Jun.

G. S. CALLENDER, Instr. in Pol. Econ.

A.B., Oberlin Col., '91; A.B., Harv., '93; A.M., '94; Ph.D., '97.

- *Economic Hist. of the U. S.

Harvard — continued

- *Industrial Revolution of the 18th and 19th Cents. ii-iii, 15, F.-Jun.
 *Western Civilization in its Economic Aspects. ii-iii, 15, F.-Jun.

FRANCIS G. PEABODY, Prof. of Christian Morals.

A.B., Harv., '69; A.M. and S.T.B., '72; S.T.D., Yale, '87.

- *[Ethics of Social Questions. iii, 30.
 (With Dr. Rand.)]
 [Sociolog. Sem. Christian Doct. of the Social Order. ii, 30.]

FREDERICK W. PUTNAM, Prof. of Archaeology and Ethnology, and Curator of Peabody Museum.

A.M. (hon.), Williams, '68; S.D. (hon.), Univ. of Pa., '94; Curator Dept. Anthropol., Am. Mus., Central Park, N. Y.

Primitive Religion. iii, 30. (With Mr. Dixon.)

R)Am. Archaeol. and Ethnol. Research.

F. RUSSELL, Asst. in Anthropology.

S.B., Univ. of Iowa, '92, and S.M., '95; Asst., same, '94-5.

- *Gen. Anthropology, Archaeology, Ethnology. iii, 30. (With an Asst.)

R)Somatology. iii, 15, F.-Jun.

R)Somatology (adv). Research—?

JOHNS HOPKINS.

9 Graduate Students, 1897-8.

SIDNEY SHERWOOD, Assoc. Prof. of Pol. Econ.

Ph.D., Johns Hopkins, '91.

Legal Aspects of Economics. ii, 15, O.-F.

Corporations and Economics. ii, 15, F.-My.

Econ. Conference. ii, 30.

Economic Theory. ii, 30.

- *Economics (adv). ii, 15, O.-F.

JACOB H. HOLLANDER, Assoc. in Economics.

Ph.D., Johns Hopkins, '94.

Development of Economic Theories. ii, 15, O.-F.

Financial Hist. of U. S. ii, 15, F.-My.

*Economics (adv). ii, 15, F.-My.

*Current Congressional Happenings. i, 30.

LELAND STANFORD, JR.

2 Graduate Students, 1897-8.

Hopkins Railway Library, about 10,000 vols.; Transportation, Railway History, Economics, and Law.

AMOS G. WARNER, Prof. of Applied Economics.

B.L., Nebraska, '85; Ph.D., Johns Hopkins, '88; Prof. of Pol. Econ., Nebraska, '87-'91.

*[Corporate Industry. iii, 15, S.-D.]

*[Personal Economics. ii, 15, S.-D.]
 Seminary. (With Ross and Durand.) ii, 32.

EDWARD A. ROSS, Prof. of Sociology.

A.B., Coe Col., '86; Ph.D., Johns Hopkins, '91; Prof. of Econ. and Social Science, Indiana, '91-2; Assoc. Prof. of Pol. Econ. and Finance, Cornell, '92-3.

[Economic Theory (adv). ii, 15, S.-D.]

*[Sociology. iii, 32.]

MARY R. SMITH, Asst. Prof. of Social Sci.

Ph.B., Cornell, '80, and M.S., '82; Ph.D., Stanford, '96; Instr. in Hist. and Econ., Wellesley, '86-'90.

*[Statistics and Sociology. iii, 17, Ja.-My.]

EDWARD D. DURAND, Asst. Prof. of Finance and Administration.

A.B., Oberlin, '93; Ph.D., Cornell, '96; Legislative Librarian, N. Y. State Library, '96-7; Student, Berlin, '97.

*Practical Economic Questions. iii, 17, Ja.-My.

MICHIGAN.

10 Graduate Students, 1897-8.

HENRY C. ADAMS, Prof. of Pol. Econ. and Finance.

A.B., Iowa Col., '74; Ph.D., Johns Hopkins, '78; Lect., Johns Hopkins, and Cornell; Statistician to Interstate Commerce Commission; Special Expert Agent on Transportation, 11th Cens.; Director of Economics, School of Applied Ethics.

[Devel. and Significance of Eng. Pol. Econ. iii, 6, O.-N.]

Devel. and Significance of Hist. School of Econ. iii, 6, O.-N.

[Devel. and Significance of Austrian School of Econ. iii, 6, O.-N.]

Relations of the State to Industrial Action. iii, 6, F.-Mar.

[Labor Organizations and Corporations as Factors in Industrial Organization. iii, 6, F.-Mar.]

*History of Industrial Society. ii, 17, O.-F.

Transportation Problems. iii, 17, F.-Jun.

Sem. Economics. ii, 17, O.-F.

F. M. TAYLOR, Junior Prof. of Pol. Econ. and Finance.

A.B., Northwestern, '76, and A.M., '79; Ph.D., Mich., '88; Prof. of Hist. and Politics, Albion, '79-'92.

*Hist. and Theory of Money and Banking. ii, 17, O.-F.

Hist. of Pol. Econ. ii, 17, F.-Jun.

*Principles of Finance. ii, 17, F.-Jun. Sem. Economics. ii, 17, F.-Jun.

*Socialism. ii, 17; F.-Jun.

[The Value of Money, Theory, and Statistics. iii, 6, O.-N.]

[The Standard of Value. iii, 6, N.-D.]

Paper Money. iii, 6, O.-N.

[Social Philos., with spec. ref. to Econ. Probs. iii, 6, F.-Mar.]

[Credit as a factor in Production. iii, 6, Mar.-Ap.]

The Agricult. Problem. iii, 6, Mar.-Ap.

C. H. COOLEY, Instr. in Sociology.

A.B., Mich., '87; Ph.D., same, '94.

*Principles of Sociology. iii, 17, O.-F. Problems, F.-Jun.

*Sociology (adv). ii, 17, F.-Jun.

Hist. Devel. of Sociolog. Thought. iii, 6, Ja.-F.

Nature and Process of Social Change. iii, 6, My.-Jun.

[Aims and Methods in Study of Society. iii, 6, Ja.-F.]

Social Psychology. iii, 6, My.-Jun.

[Current Changes in Social Organization of U. S. iii, 6, My.-Jun.]

[Theory of Population. iii, 6, Ja.-F.]

*Theory of Statistics. i, 34.

*Special Studies in Statistics. ii, 17, F.-Jun.

MINNESOTA.

26 Graduate Students, 1897-8.

WILLIAM W. FOLWELL (see 9).

Pol. Sci. Sem. i, 36.

Individual Research. ii, 36.

FRANK L. MCVEY, Instr. in Economics.

A.B., Ohio Wesleyan, '93; Ph.D., Yale, '95; Instr. in Hist. Teachers' College, N. Y., '96.

Comparative Econ. Doctrine. ii, 36.

*Economics. iv, 13, S.-N.

*Modern Industrialism. iv, 12, Mar.-Jun.

SAMUEL G. SMITH, Lecturer on Sociology.

A.B., Cornell Col., '72; A.M., and Ph.D., Syracuse, '84; D.D., Upper Iowa Univ., '86.

*Social Sci. iii, 12, Mar.-Jun.

Indiv. Research. i, 36.

MISSOURI.

3 Graduate Students, 1897-8.

F. C. HICKS, Prof. of Hist. and of Pol. Econ.

A.B., Univ. of Mich., '86; Ph.D., same, '90.

*Economic History. iii, 36.

*Problems in Economics. iii, 36.

*Modern Financial Systems. ii, 36.

Seminar. ii, 36.

NEW YORK.

21 Graduate Students, 1897-8.

FRANK M. COLBY, Prof. of Economics.

A.B., Columbia, '88, and A.M., '89.

Practical Economics. ii, 24.

Economic Theory. ii, 24.

Hist. of Indust. Devel. ii, 30.

I. F. RUSSELL, Prof. of Sociology, and of Law in N. Y. U. Law School.

A.M., N. Y. U., '78; LL.M., Yale, '79; D.C.L., Yale, '80; LL.D., Dickinson, '93; Prof. Econ., and Const. Law, N. Y. U., '80-'93.

[Intro. to Sociology. ii, 30.]

Principles of Sociology. ii, 30.

NORTHWESTERN.

6 Graduate Students, 1897-8.

JOHN H. GRAY, Prof. of Political and Social Science.

A.B., Harv., '87; Ph.D., Halle, '92; Instr. in Econ., Harv., '87-9.

Administration. ii, 36.

*[Finance. ii, 36.]

*Seminary. ii, 36.

WILLIAM CALDWELL, Prof. of Moral and Social Philosophy.

A.M., Pass Degree, Edinburgh, '84; A.M., and Honors of First Class, same, '86; Asst. Prof. of Philos., same, '88-'90; Instr., Cornell, '90-1; Instr., Chicago, '92-4; Fellow, Edinburgh, '86-'93, and Sc.D., '93.

*Seminary. Ethical Philos. ii, 36.

*Seminary. Sociology. iii, 36.

PENNSYLVANIA.

12 Graduate Students, 1897-8.

Colwell Lib. of Pol. Econ., 7,000 vols. Carey Lib., valuable for economic history, including 3,000 Eng. pams. 1 Fel. \$500 + tui; 1 Schol. (see 9).

SIMON N. PATTEN, Prof. of Pol. Econ.

Ph.D., Halle.

Hist. of Pol. Econ. ii, 15, O.-F.

Recent Devel. of Pol. Econ. ii, 15, F.-My.

Relat. of Eng. Philos. to Econ. in 18th Cent. ii, 15, O.-F.

[Scope and Method of Pol. Econ. ii, 15, F.-My.]

[Pract. Applications of Econ. Theory. ii, 12, O.-F.]

Problems of Sociol. ii, 15, F.-My.

Special Topics. ii, 30.

HENRY R. SEAGER, Asst. Prof. of Pol. Econ.

Ph.B., Mich., '90; Ph.D., Univ. of Pa., '94; Instr. in Pol. Econ., same, '94-6.

Econ. Conference. ii, 30.

Adv. Reading in Ger. and Fr. Economics. ii, 30.

Eng. Indust. Hist. and Devel. of Econ. Theory, 1750-1870. ii, 15, F.-My.

EMORY R. JOHNSON, Asst. Prof. of Transportation and Commerce.

B.L., Univ. of Wis., '88; M.L., same, '91; Fel. in Econ., Univ. of Pa., '92-3; Ph.D., same, '93;

Lect. on Transporta., same, '93-4; Instr., same, '94-6; Instr. in Econ., Haverford, '93-6.

Theory of Transportation. i, 30.

[Am. Railway Transportation. ii, 30.]
Transportation Systems of the United Kingdom and Germany. i, 30.

Hist. of Commerce since 1500. I, 30.

ROLAND P. FALKNER, Assoc. Prof. of Statistics.

Ph.B., Univ. of Pa., '85; Ph.D., Halle, '88; Instr. in Statistics, '88-'91.

Intro. to Statistics. ii, 15, O.-F.

Statistics of Econ. Problems. ii, 15, F.-My.

Hist. and Theory of Statistics. ii, 15, O.-F.

Statistical Organization. ii, 15, F.-My.

SAMUEL MCC. LINDSAY, Asst. Prof. of Sociol.

Ph.B., Univ. of Pa., '89; Ph.D., Halle, '92.

Theory of Sociol. (2 yr. course). ii, 30.

Social-Debtor Classes. ii, 30.

Sociol. Field Work. ii, 30.

Seminary. ii, 30.

PRINCETON.

5 Graduate Students, 1887-8.

1 Fellowship, \$500.

WINTHROP M. DANIELS, Prof. of Pol. Econ.

A.B., Princeton, '88, and A.M., '90; Instr. Wesleyan, '91-2.

*Public Finance. ii, 18, S.-Ja.

*Hist. of Pol. Econ. ii, 18, F.-My.

W. A. WYCKOFF, Lect. on Sociology.

A.B., Princeton, '88, and A.M., '91.

*Sociology. ii, 18, F.-My.

RADCLIFFE.

4 Graduate Students, 1897-8.

[See Harvard Courses marked R.]

Seminary in Econ. (With Prof. Tausig and Asst. Prof. Cummings.)

W. J. ASHLEY.

*[Med. Econ. Hist. of Europe. iii, 30.]

DR. CUNNINGHAM, Trinity Col., Cam. Eng.

- *Industrial Revolution in Eng. in 18th and 19th Cents. iii, 15, F.-Jun.

G. S. CALLENDER.

- *Econ. Hist. of U. S.

EDWARD CUMMINGS.

- *Princ. of Sociol. iii, 30.

EDWARD CUMMINGS and JOHN CUMMINGS.

- *Soc. and Econ. Conditions of Workingmen. iii, 30.

JOHN CUMMINGS.

- *Statistics, Theory, Methods, Practice. (Of last three courses, two only will be given in 1898-9.

F. RUSSELL.

- *Gen. Anthropol. — ?

VANDERBILT.

2 Graduate Students, 1897-8.

FREDERICK W. MOORE [see 9].

CHAS. F. EMERICK, Asst. in Economics.

A.B., Wittenberg, '89; Ph.M., Mich., '95; Ph.D., Columbia, '97.

Theory of Pol. Econ. Growth of Corporate Industry. iii, 32.

- *A Study of Socialism. iii, 16.

WELLESLEY.

6 Graduate Students, 1897-8.

KATHARINE COMAN [see 9].

- *Indust. Hist. of U. S. iii, 17, F.-Jun.
- *[Indust. Hist. of Eng. iii, 17, S.-Ja.]
- *Statistical Study of Problems in the U. S. iii, 17, S.-Ja.

EMILY GREENE BALCH, Instr. in Economics.

A.B., Bryn Mawr.

- *Socialism. iii, 17, F.-Jun.
- *Evolution and Present Conditions of Wage Labor. iii, 17, S.-Ja.
- *Social Economics. iii, 17, S.-Ja.; also F.-Jun.

WESTERN RESERVE.

4 Graduate Students, 1897-8.

S. F. WESTON, Assoc. Prof. of Pol. and Soc. Sci.

A.B., Antioch, '79, and A.M., '85; Asst. in Economics, Columbia, '92-4.

- *Social Theories. iii, 17, F.-Jun.
- *Pauperism and Charities. iii, 17, F.-Jun.
- *Money and Banking. iii, 17, F.-Jun.
- U. S. Tariff and Revenue System. iii, 17, F.-Jun.
- *Economic History of England. iii, 16, S.-Ja.
- *Economic History of United States. iii, 16, S.-Ja.
- *The State. iii, 16, S.-Ja.
- *Civil Government. iii, 16, S.-Ja.
- *Social Problems. iii, 17, F.-Jun.
- Economic Theories. iii, 36.

WISCONSIN.

24 Graduate Students, 1897-8.

Location at State capital gives special facilities for studying the State's activities and methods of administration. Field work in charitable and correctional institutions in Madison and Chicago. Opportunity for continuous practical work during summer months.

RICHARD T. ELY, Prof. of Pol. Econ. and Director of the Sch. of Econ., Pol. Science and Hist.

A.B., Columbia, '76; Ph.D., Heidelberg, '79; LL.D., Hobart, '92; Chair of Pol. Econ., Johns Hopkins, '81-'92.

Distribution of Wealth. iii, 72, S.-Jun. (This course is to run through '98-'99, and '99-1900.)

Public Finance. iii, 18, S.-F. Taxation and Am. Public Finance. iii, 18, F.-Jun.

[Social Ethics. ii, 18, S.-F.]

[Socialism. ii, 18, S.-F.]

Economic Seminary. Recent Devel. of Econ. Theory. ii, 36. (With Prof. Scott and Dr. Jones.)

WILLIAM A. SCOTT, Prof. of Econ. Hist. and Theory.

A.B., Rochester, '86; Prof. Hist. and Pol. Econ., Univ. So. Dak., '87-'90; Instr. in Hist., Johns Hopkins, '91-2; Ph.D., Johns Hopkins, '92.

[Theories of Value. ii, 18, S.-F.]

Wisconsin — continued

- Theories of Rent, Wages, Profits, and Interest. ii, 36, S.-F.
 [Theories of Production and Consumption. ii, 18, F.-Jun.]
 Classical Economists. iii, 18, F.-Jun.
- EDWARD D. JONES, Instr. in Econ. and Statistics.
 B.S., Ohio Wesleyan Univ., '92; Halle and Berlin, '93-4; Ph.D., Univ. of Wisconsin, '95.
 Economic Geography. ii, 18, S.-F.
 Statistics. iii, 18, F.-Jun.
 Charity and Crime. iii, 18, S.-F.
- BALTHASAR H. MEYER, Instr. in Sociol. and Transportation.
 B.L., Univ. of Wis., '94; Berlin, '94-5; Fel. Univ. of Wis., '95-7; Ph.D., Univ. of Wis., '97.
- *Elements of Sociology. iii, 18, S.-F.
 *Psychological Sociologists. ii, 18, S.-F.
 Modern Sociological Thought. iii, 18, F.-Jun.
 Transportation. ii, 18, F.-Jun.
- FRANK C. SHARP [see 7].
 Social Ethics. ii, 18, F.-Jun.
 Readings in Ger. Social Philos. ii, 18, S.-F.

YALE.

- 43 Graduate Students, 1897-8.
 Pol. Science Club meets fortnightly. Club Room with Library for Graduate Students.
- W. G. SUMNER, Prof. of Pol. and Soc. Sci.
 A.B., Yale, '63; LL.D., Tenn., '84.
 Anthropology. ii, 32.
 Systematic Societology. ii, 32.
 [Indust. Rev. Renaissance Period. ii, 32.]
 [Begin. of Indust. Organization. ii, 32.]

*Science of Society. (German.) ii, 32.

- H. W. FARNAM, Prof. of Pol. Econ.
 A.B., Yale, '74; R.P.D., Strassburg, '78.
 [Pauperism. ii, O.-D.]
 [Modern Organiza. of Labor. ii, 20, Ja.-Jun.]
 Princs. Pub. Finance. ii, 32.
- A. T. HADLEY, Prof. of Pol. Econ.
 A.B., Yale, '76, and A.M., '87.
 Econ. Problems of Corporations. i, 32.
 Relat. between Econ. and Ethics. ii, 32.
- *Railroad Transportation. ii, 32.

- A. T. HADLEY and IRVING FISHER.
 *Economics (gen. course). iii, 32.
- W. F. BLACKMAN, Prof. of Christian Ethics.
 A.B., Oberlin, '77; D.B., Yale, '80; Ph.D., Cornell, '93.
 Social Science. ii, 32.
 Lit. of Social. ii, 12, O.-D.
 Soc. Study of Family. i, 12, O.-D.
 Soc. Teach. and Influence of Christianity. i, 32.

- J. C. SCHWAB, Asst. Prof. of Pol. Science.
 A.B., Yale, '86, and A.M., '88; Ph. D., Göttingen, '89.
 Finance. ii, 32.
 U. S. Indust. Hist. ii, 32.
 U. S. Financial Hist. i, 32.
 Finances of Confed. States, 1861-65. i, 32.

- IRVING FISHER, Asst. Prof. of Pol. Econ.
 A.B. Yale, '88, and Ph.D., '91.
 Principles of Economics (adv). ii, 32.
 Statistics. ii, 20, Ja.-Jun.
 Vital Statistics and Life Insurance. ii, 12, O.-D.

11. FINE ARTS, AND THE HISTORY OF ART.

[Including Classical Archæology (but see also 2). Also Theory of Music.]

BARNARD.

3 Graduate Students, 1897-8.

[Columbia Graduate Courses open to Barnard Graduate Students.]

BROWN.

7 Graduate Students, 1897-8.

WILLIAM C. POLAND, Prof. of Hist. of Art and Dir. of Mus. of Fine Arts.

A.B., Brown, '68, and A.M. '71; Instr., Brown, '70-5; Asst. Prof. Gk. and Latin, same, '76-'88; Assoc. Prof. Gk. same, '88-'92; Dir. Am. School at Athens, '91-2.

*Class. Archæology. iii, 12, S.-D.

*Early Chris. and Med. Art. iii, 11, Ja.-Mar.

*Art of the Renaissance. iii, 10, Ap.-Jun.

*Art in 17th and 18th Cents. iii, 12, S.-D.

*Art in 19th Cent. iii, 11, Ja.-Mar.

*Theory and Criticism. iii, 10, Ap.-Jun.

J. N. ASHTON, Instr. in Mus. Theory and Hist.

A.B., Brown, '91; A.M., Harv., '93.

*Fugue, Free Composi. and Instrumentation. iii, 33.

*Structure and Hist. of Music. iii, 33.

[The Symphony. iii, 33.]

The Song. iii, 33.

BRYN MAWR.

1 Graduate Student, 1897-8.

RICHARD NORTON, Lect. in the Hist. of Art.

A.B., Harv., '92.

Class. Archæol. ii, 30.

*Hist. of Gk. Art. ii, 30.

*Hist. of Ital. Art. ii, 30.

CALIFORNIA.

HENRY T. ARDLEY, Assoc. Prof. of Decorative and Industrial Art.

S.A., Col. of Applied Art, London.

Historic Design. vi, 32.

Life Class. vi, 32.

[History of Art.] ii, 32.

*Interior Decoration. vi, 32.

*Ceramics. vi, 32.

(See also James T. Allen's course on Archæology under 2.)

CHICAGO.

13 Graduate Students, '97-8; and 13 in Summer Quarter, '97. 1 Fellow.

FRANK B. TARBELL (see 2).

Intro. to Classical Archæol. iv, 12, O.-D.

Hist. of Gk. Sculp. iv, 12, Ja.-Mar.

[Greek Vases and Coins. iv, 12, Ap.-Jun.]

Greek Life, Studied from the Monuments. iv, 12, Ap.-Jun.

J. H. BREASTED (see 1).

Egyptian Archæology. iv, 12, Ja.-Mar.

Egyptian Archæology and the old Test. iv, 6, Au.-S.

Egyptian Life and Antiquities. iv, 12, Ap.-Jun.

WARDNER WILLIAMS, Instr. in and Director of Music.

Ph.B., Alfred Univ., '80; Ph.M., '83; Mus. B., '87; Ph.D., '90; Prof. of Music, Milton Col., '80-85; Director of Music, Alfred Univ., '85-'92; Reader in Music, Chicago, '92-4; Asst. in Music, '94-6; Mus. Doc., Milton Col., '96.

Harmony (el). v, 12, O.-D.

Harmony (adv). v, 12, Ja.-Mar.

Counterpoint. v, 12, Ap.-Jun.

Hist. of Music. v, 12, O.-Ja.

Theory of Music. v, 12, O.-Ja.

[NOTE.—These courses in Music do not count towards a degree.]

FRANKLIN JOHNSON (see 9).

Hist. of Christian Art. iv, 24, O.-Mar.

AGNES M. WERGELAND (see 9).

[History of Architecture in Middle Ages. iv, 6, Ju.-Au.]

Ecclesiastical Architecture During the Middle Ages. iv, 6, Jul.-Au.

COLUMBIA.

9 Graduate Students, 1897-8.

E. A. MACDOWELL, Prof. of Music.

Prof. Piano and Ensemble, Conserv. Darmstadt, '82-3; Mus. D., Princeton, '96; Prof. Music, Columbia, '96.

General Music Course. ii, 30.

Modern Music. ii, 30.

Theory, Harmony, etc. ii, 30.

Counterpoint, Canon, Fugue. ii, 30.

Free Composition, Analysis, instrumentation, Symphonic Forms.—?

CORNELL.

4 Graduate Students, 1897-8.

Instruction given in conn. with the Museum of class. Archæol., which contains over 500 large casts of sculpture repr. the hist. of Greek and Roman sculptural art. 1 Grad. Schol., \$300, assigned to Class Archæol. and Compar. Philol.

ALEXANDER B. TROWBRIDGE, Prof. of Architecture.

B.S., Cornell, '90

*Hist. of Architecture. iii, 32.

EUGENE P. ANDREWS, Curator of Museum of Casts.

A.B., Cornell, '95.

*Archæol. Sem. ii, 32.

HARVARD.

3 Graduate Students, 1897-8.

(Courses marked R are open to Radcliffe Graduate Students.)

Fogg Art Museum contains a large collection of casts and photographs.

CHARLES ELIOT NORTON, Prof. of the History of Art.

A.B., Harv., '46, and A.M., '49; Litt.D., Cambridge, '84; LL.D., Harv., '87; L.H.D., Columbia, '88.

Literature and Fine Arts in Italy during the Middle Ages. ii-iii, 30.

E. ROBINSON.

Curator of Boston Museum of Fine Arts.

*Hist. of Greek Art. iii, 30.
Sem. Greek Art.

C. H. MOORE, Prof. of Art and Director of the Fogg Art Museum.

A.M. (hon.), Harv., '90.

*[Fine Arts in the Middle Ages, and the Renaissance. iii, 30.]

JOHN K. PAINE, Prof. of Music.

A.M. (hon.), Harv., '69; Mus.D., Yale, '90.

*Hist. of Music. i-ii, 30.

*[Instrumentation. i, 30.]

*Chamber Music of Beethoven and other masters. ii, 30.

R) Canon and Fugue. Free Thematic Music. ii, 30.

R) Adv. Canon and Fugue and Free Composi. ii, 30.

WALTER R. SPALDING, Instr. in Harmony.

A.B., Harv., '87, and A. M., '88.

*Harmony. ii-iii, 30.

*Counterpoint. ii, 30.

MICHIGAN.

— Graduate Students, 1897-8.

M. L. D'OOGHE [see 2].

*Hist. of Greek Art. iii, 17, O.-F.

Inscriptionum Græcorum. ii, 17, F.-Jun.

Gk. Antiquities. Lects. on Monuments, and Private Life of Athenians. i, 17, F.-Jun.

FRANCIS W. KELSEY [see 2].

*Intro. to Roman Archæology. iv, 17, F.-Jun.

JAMES A. CRAIG, [see 1].

*Assyrian-Babylonian Archæol. Babylonian Art, from earliest times. ii, 17, O.-F.

A. A. STANLEY, Prof. of Music.

A.M., Mich., '90.

*Canon and Fugue. ii, 34.

*Musical Form. ii, 34.

Free Composition. ii. 34.
Instrumentation. ii, 34.

MISSOURI.

2 Graduate Students, 1897-8.

JOHN PICKARD, Prof. of Class. Archæol., and Director of the Museum of Class. Archæol.

A.B., Dartmouth, '83; A.M., same, '86; Ph.D., Munich, '92.

Topography and Monuments of Athens. ii, 36.

Archæol. Seminar. ii, 36.

*Hist. of Greek Art. iii, 36.

*Hist. of Renaissance Painting. iii, 36.

*Homeric Art. i, 18.

Intro. Study of Greek Vases and Vase Painting. ii, 18.

*Etruscan and Græco-Roman Art. ii, 36.

PRINCETON.

16 Graduate Students, 1897-8.

1 Fellowship of \$400 in Archæology.

ALLAN MARQUAND, Prof. of Archæol. and Hist. of Art.

A.B., Princeton, '74; Ph.D., Johns Hopkins, '80; L.H.D., Hobart.

*Greek Sculpture. ii, 18, S.-Ja.

*Renaissance Painting. ii, 18, F.-My.

A. L. FROTHINGHAM, Jr., Prof. of Archæology and Hist. of Art.

A.M. and Ph.D., Leipzig, '93.

*Etruscan and Roman Art. ii, 18, S.-Ja.

*Art in Italy during the Middle Ages. ii, 18, F.-My.

History of Christian Art and Archæol. i, 30.

RADCLIFFE.

1 Graduate Student, 1897-8.

[See Harvard Courses marked R.]

JOHN K. PAINE.

*[Hist. of Music. i, 30.]

*Chamber Music of Beethoven and Other Masters. ii, 30.

W. R. SPALDING.

*Harmony. iii, 30.

*Counterpoint. iii, 30.

VANDERBILT.

7 Graduate Students, 1897-8.

H. C. TOLMAN [see 2].

Class. Archæol. i, 8.

WESTERN RESERVE.

2 Graduate Students, 1897-8.

H. N. FOWLER [see 2].

*Greek Archæol. iii, 17, F.-Jun.

*Hist. of Ancient Art. iii, 36.

*[Hist. of Post-Classical Art. iii, 36.]

S. B. PLATNER [see 2].

*Roman Archæology. iii, 16, S.-Ja.

YALE.

3 Graduate Students, 1897-8.

Lowell Mason Lib. has large coll. of church music.

T. D. GOODELL [see 2].

[Greek Art. ii, 32.]

J. F. WEIR, Prof. of Painting and Design.

A.M., Yale, '91.

Technical Course in Painting. iv, 32.
Course in Modeling. iv, 32.

J. H. NIEMEYER, Prof. of Drawing.

A.M., Yale, '74.

Drawing. iv, 32.

J. M. HOPPIN, Prof. of Hist. of Art.

A.B., Yale, '40; LL.B., Harv., '42; D.D., Knox, '70; Prof. of Homiletics and Pastoral Theol., Yale, '61-'79; Lect. on Forensic Eloquence, Yale Law School, '72-5.

History of Art. i, 20, Ja.-Jun.

H. W. PARKER, Prof. of Theory of Music.

A.M., Yale, '94.

*Harmony. ii, 32.

*Counterpoint. ii, 32.

*Strict Composition. ii, 32.

*Instrumentation. ii, 32.

Free Composition. ii, 32.

S. S. SANFORD, Prof. of Applied Music.

A.M., Yale, '94.

Pract. Music (organ and piano). — ?

III. PURE SCIENCE.

12. MATHEMATICS.

BARNARD.

4 Graduate Students, 1897-8.

[All Columbia Courses under to open to Barnard Graduate Students.]

BROWN.

3 Graduate Students, 1897-8.

NATHANIEL F. DAVIS, Prof. of Pure Math.

A.B., Brown, '70, and A.M., '73; LL.D., Colby, '94; Instr. Math., Brown, '74-9; Asst. Prof. '79-'89; Assoc. Prof., '89-90.

*Applications of the Calculus. iii, 11, Ja.-Mar.

HENRY P. MANNING, Asst. Prof. of Math.

A.B. and A.M., Brown, '86; Fel., Johns Hopkins, '90-1, and Ph.D., '91.

*Diff. Equations. iii, 23, S.-Mar.

Theory of Functions. iii, 33.

Substitutions and Transformation Groups. iii, 33.

[Mod. Algebra, Higher Plane Curves and Surfaces. iii, 33.]

[Diff. Equations (adv.) iii, 33.]

BRYN MAWR.

6 Graduate Students, 1897-8.

1 Fellowship, \$525.

CHARLOTTE A. SCOTT, Prof. of Math.

Graduate in honors, Girton Col., '80; B.Sc., Univ. of London, '82; Lect. on Math., Girton, '80-4; Lect. in connection with Newnham Col., '80-3; D.Sc., Univ. of London, '85.

Theory of Plane Algebraic Curves with reference to the Historical Development of the Subject. ii, 30.

*Modern Geom. ii, 30.

JAMES HARKNESS, Prof. of Math.

Major Schol., Trinity Col., Cambridge, '82; Graduate in honors (8th Wrangler) in Cambridge Math. Tripos, '85; Math. Exhibitioner,

London Univ. Intermediate Arts Examination, '85; Math. Schol. London Univ. B.A. Exam., '87; A.M., Univ. of Cambridge.

Theory of Groups. ii, 30.

*A General Course in Analysis. ii, 30.

ISABEL MADDISON, Reader in Math.

Graduate in honors, Girton Col., '92; B.Sc., Univ. of London, '93; Ph.D., Bryn Mawr, '96.

*Differential Equations. i, 30.

CALIFORNIA.

13 Graduate Students, 1897-8.

IRVING STRINGHAM, Prof. of Mathematics.

A.B., Harvard; Ph.D., Johns Hopkins.

Absolute Geom. ii, 32.

[Spherical Harmonics. ii, 32.]

Mathematical Sem. i, 32.

*[Hist. of Math. ii, 32.]

*Logic of Math. ii, 32.

*Advanced Calculus. iii, 32.

GEORGE C. EDWARDS, Assoc. Prof. of Math.

Ph.B., Univ. of Cal.

*Differential Equations. iii, 32.

MELLEN W. HASKELL, Assoc. Prof. of Math.

A.M., Harvard; Ph.D., Göttingen.

Theory of Functions of Real Variables. ii, 32.

[Higher Geometry. iii, 32.]

[Abelian Functions. ii, 32.]

Theory of Algebraic Forms. iii, 32.

[Theory of Numbers. ii, 16, Ja.-My.]

*[Selected Topics in Higher Math. ii, 32.]

ARCHIE B. PIERCE, Instr. in Math.

A.M., Harvard.

*Analyt. Projective Geom. iii, 32.

*[Quaternions (el). iii, 32.]

CHARLES A. NOBLE, Instr. in Math.

B.S., Univ. of Cal.

Partial Diff. Equations. iii, 16, Au.-D.

Theory of Functions of Complex Variables (intro). iii, 16, Ja.-My.

[Elliptic Functions. ii, 32.]

LEONARD E. DICKSON, Instr. in Math.

A.M., Univ. of Texas; Ph.D., Univ. of Chicago.

Lie's Transformation Groups. ii, 32.

[Theory of Substitutions and Klein's Ikosahedron. ii, 32.]

CHICAGO.

73 Graduate Students, 1897-'8; and 67 in Summer Quarter, '97.

Math. Club, directed by the corps of instrs., meets fortnightly. 4 Fels.

Eliakim HASTINGS MOORE, Head Prof. of Math.

A.B., Yale, '83, and Ph.D., '85; Tutor in Math., same, '87-'9; Asst. Prof. of Math., Northwestern, '80-'91, and Assoc. Prof., '91-'2; Prof. of Math., Chicago, '92-6.

Abstract Groups. iv, 12, Ja.-Mar.

Projective Geometry. iv, 12, O.-D.

[Theory of Numbers. iv, 12, O.-D.]

[General Arithmetic. I, II. iv, 24, Ja.-Jun.]

Groups Seminar. ii, 24, Ja.-Jun.

Transfinite Totalities. iv, 12, O.-D.

Elliptic Modular Functions. iv, 12, Ap.-Jun.

[Theory of Substitutions. iv, 12, O.-D.]

OSKAR BOIZA, Prof. of Math.

Ph.D., Göttingen, '86; Reader in Math., Johns Hopkins, '88-'9; Assoc. in Math., Clark, '89-'92.

Elliptic Functions. iv, 12, O.-D.

[Applications of Elliptic Functions. iv, 12, Ja.-Mar.]

Hyperelliptic Functions. iv, 12, Ja.-Mar.

*Integral Calculus I, II, (adv). iv, 24, O.-Mar.

[Theory of Invariants. iv, 18, O.-F.]

[Calculus of Variations. iv, 6, F.-Mar.]

HEINRICH MASCHKE, Assoc. Prof. of Math.

Ph.D., Göttingen; Prof. of Math., Luisenstädtische Gymnasium, Berlin, '80-'90; Asst. Prof. of Math., Chicago, '92-6.

[Linear Substitution Groups. iv, 12, O.-D.]

[Diff. Geom. (adv). iv, 12, Ap.-Jun.]

Functions of a Complex Variable. iv, 12, Jul.-S., and Ja.-Mar.

[Linear Diff. Equations. iv, 12, Ap.-Jun.]

Modern Analytic Geometry. iv, 12, Ja.-Mar.

Higher Plane Curves. iv, 12, Ap.-Jun.

[Algebraic Surfaces. iv, 12, Ap.-Jun.]

Theory of Invariants. iv, 12, Jul.-S.

Seminar. Lin. Homogen. Subst. Groups. ii, 12, Ap.-Jun.

J. W. A. YOUNG, Asst. Prof. of Math. Pedagogy.

A.B., Bucknell, '87, and A.M., '90; Fel. in Math., Clark, '80-'92, and Ph.D., '92; Tutor in Math., Chicago, '92-3, and Instr., '94-7.

Mathematical Pedagogy. iv, 6, Jul.-Au.

*[Determinants. iv, 6, Jul.-Au.]

*Theory of Equations I, II (adv). v, 24, O.-Mar.

JAMES H. BOYD, Instr. in Math.

A.B., Princeton, '86, A.M., '88, and Sc.D., '92; Prof. of Math., Macalester Col., '87-'90, and '91-'2; Assoc. in Math., Chicago, '93-5.

*Calculus I, II, III. v, 36, O.-Jun.

*Integral Calculus III (adv). Differential Equations. iv, 12, Ap.-Jun.

HARRIS HANCOCK, Instr. in Math.

A.B., Johns Hopkins, '88; A.M., and Ph.D., Berlin, '94; Asst. in Math., Chicago, '92-5, and Assoc., '95-7.

*Theory of Equations (adv). v, 12, Jul.-S.

Calculus of Variations. iv, 12, Jul.-S.

HERBERT E. SLAUGHT, Instr. in Math.

A.B., Colgate, '83; A.M., same, '86; Ph.D., Chicago, '98; Teacher of Math., Peddie Inst., N. J., '83-8; Principal Peddie Inst., '88-'92; Fellow, Chicago, '92-4, and Reader in Math., '94-5, and Asst., '95-9, and Assoc., '96-7.

*Calculus I, II. v, 24, Ja.-Jun.

*[Integral Calculus. v, 12, Jul.-S.]

Chicago — continued

*Solid Analytics. v, 12, Ap.-Jun.

*Integral Calculus (adv). v, 12, Jul.-S.

KURT LAVES [see 13].

Analytical Mechanics I, II, III. iv, 12, O.-Jun.

G. A. MILLER, Instr. in Math. (Cornell).

Seminar Permutation-Groups. ii, 6, Jul.-Au.

CLARK.

11 Graduate Students, 1897-8.

Two Fels. \$600 each, two \$400 each; two Schols. \$200 each, two \$100 each.

WILLIAM E. STORY, Prof. of Math.

A.B., Harv., '71; Parker Fellow, '74-5; Ph.D., Leipzig, '75; Tutor in Math., Harv., '75-6; Assoc. Prof. Math., Johns Hopkins, '76-'89.

Hyperspace and Noneuclidean Geometry (adv). iii, 35, O.-Jun.

Finite Differences (adv). ii, 12, O.-D. Synthetic Geometry (intro). ii, 23, Ja.-Jun.

Seminary (adv). i, 35, O.-Jun.

HENRY TABER, Asst. Prof. of Math.

Ph.B., Yale, '82; Ph.D., Johns Hopkins, '88; Asst. in Math., Johns Hopkins, '88-9; Docent in Math., Clark, '89-'92.

Transformation Groups (adv). 36 lectures.

Analytic Geom. of Conic Sections, Quadric Surfaces, and Higher Plane Curves (intro). iii, 35.

Seminary, with intro. courses. i, 35.

Theory of Functions of Real and Imaginary Variables and Definite Integrals (intro). iii, 35.

JOSEPH DE PEROTT, Docent in Math.

Theory of Numbers (intro). ii, 18, O.-F.

Riemann's Surfaces and Abelian Integrals (adv). ii, 18, F.-Jun.

COLUMBIA.

5 Graduate Students, 1897-8.

Collection of math. models and apparatus purchased by Pres. Low from German Univ. Exhibit at Chicago Exposition.

J. HOWARD VAN AMRINGE, Prof. of Math.

A.M, Ph.D., Univ. St. of N. Y., '77; L.H.D., Columbia, '90; LL.D., Union, '94; Tutor, Columbia, '60; Act. Prof., '63; Prof., '65.

*Analytical Geom. iii, 30.

*Diff. and Integ. Calculus. iii, 30.

THOMAS SCOTT FISKE, Prof. of Math.

A.B., Columbia, '85, and A.M., '86, and Ph.D., '88; Fel. in Math., '85; Tutor, '88; Instr., '91; Adj. Prof., '94.

Gen. Theory of Functions. iii, 16, O.-F.

Calculus (adv). iii, 16, O.-F.

Theory of Functions of a Complex Variable. iii.

Theory of Abelian Functions. iii.

FRANK N. COLE, Prof. of Math.

Ph.D., Harv., '86; Lect. Math., Harv., '87-8; Instr. Math., Mich., '88-9; Asst. Prof., '89-'95.

Theory of Substitutions. ii, 30.

Groups of Linear Transformations, with Applications to Equations of the Fifth Degree. iii, 30.

Riemann's Theory of Functions, incl. Elliptic Functions. iii.

JAMES MACLAY, Instr. in Math.

C.E., Columbia, '88; Asst. in Math., same, '88-'91; Tutor, '91-6.

Analytical Theory of Curves of Double Curvature and Curved Surfaces. iii, 30.

Differential Equations. iii.

J. BRACE CHITTENDEN, Tutor in Math.

Shattuck Scholar, Harv., '90-1; Kirkland Fel., '92-3; Ph.D., Königsberg, '93; Parker Fel., Harv., '93-4; Instr. Math., Princeton, '94-5.

Theory of Invariants. iii, 16, O.-F.

CASSIUS J. KEYSER, Tutor in Math.

A.M., Columbia, '96.

Higher Plane Curves. iii.

CORNELL.

18 Graduate Students, 1897-8.

Several thousand vols. on pure math., math. physics and astron., besides the most important math. journals. Coll. of math. models. Fel. \$500 and two grad. Schols. \$300, assigned to Dept. of Math and Astronomy. Dept. Seminary meets weekly to study some specified math.

theory of recent devel. and to hear reports on current journals and on the results of special investigation. Reading directed in Noneuclidean Geom., Theory of Probabilities, Math. Theories of Elasticity, Fluid Motion, Electricity, and Magnetism.

N. B.—Any course not desired at beginning of yr. by at least two students, properly prepared, may not be given.

LUCIEN A. WAIT, Prof. of Math.

A.B., Harv., '70; Asst. Prof. of Math., Cornell, '70-7; Assoc. Prof., '77-'91.

*Adv. Analyt. Geom. Lines of First and Second Orders. iii, 32.

*Adv. Analyt. Geom. Surfaces of First and Second Orders. ii, 32.

*Adv. Calculus. iii, 20, O.-Mar.

GEORGE W. JONES, Prof. of Math.

A.B., Yale, '59, and A.M., '62; Prof. Math., Iowa State Agri. Col., '68-'73; Asst. Prof. Math., Cornell, '77-'93; Assoc. Prof., '93-5.

*Higher Algebra and Trig. iii, 32.
Theory of Probabilities and Least Squares. ii, 32.

JAMES MCMAHON, Asst. Prof. of Math.

A.B., Dublin, '81; Gold Medal Math.; A.M., '90; Instr. in Math., Cornell, '84-'90.

*Higher Plane Curves. ii, 32.

*Quaternions and Vector Analysis. ii, 32.

Fourier's Series and Spherical Harmonics. ii, 32.

Mathematical Theory of Sound. ii, 64.

[Mathematical Theory of Fluid Motion. ii, 64.]

[Mathematical Theory of Electricity and Magnetism. ii, 32.]

JOHN H. TANNER, Asst. Prof. of Math.

A.B., Cornell, '91.

*Mathematical Readings in German. ii, 32.

*Binary Quantics. ii, 32.

Theoretical Mechanics. ii, 32.

DANIEL A. MURRAY, Instr. in Math.

A.B., Dalhousie, '84; Tutor in Math., same '85-7; Univ. Scholar, Johns Hopkins, '87-8; Fellow, '89-'90, and Ph.D., '93; Assoc. Prof. of Math. Univ. of City of New York, '90-4.

*Differential Equations. ii, 32.

Finite Differences, Factorials and Difference Equations. ii, 32.

*Descriptive and Theoretical Astronomy. iv, 32.

JOHN I. HUTCHINSON, Instr. in Math.

A.B., Bates, '89; Scholar and Fellow, Clark, '90-2; Fellow, Chicago, '94; Ph.D., Chicago, '95.

*Surfaces and Curves. iii, 20, Jan.-Jun.

*Integral Calculus. ii, 32.

*Theory of Functions. Elliptic. iii, 32.

VIRGIL SYNDER, Instr. in Math.

B.S., Iowa Agr. Col., '89; Fellow in Math., Cornell, '92-3; Ph.D., Göttingen, '94.

Modern Synthetic Geom., incl. Projective Geom. iii, 32.

Theory of Functions. General Function Theory. iii, 32.

Line Geometry. Treated both synthetically and analytically. Conducted in German. ii, 32.

GEORGE ABRAM MILLER, Instr. in Math.

Ph.D.

*Theory of Substitution Groups. iii, 11, O.-D.

*Lie's Theory of Continuous Groups. iii, 30, Jan.-Jun.

Theory of Numbers. ii, 32.

HARVARD.

18 Graduate Students, 1897-8.

[Courses marked R are open to Radcliffe Graduate Students.]

JAMES M. PIERCE, Prof. of Astron. and Math., and Dean of the Faculty of Arts and Sciences.

A.B., Harv., '53, and A.M., '56.

R) Gen. Theory of Curves and Surfaces. iii, 30.

R) [Gen. Theory of Curves and Surfaces. (2d course). iii, 30.]

*[Quaternions. iii, 30.]
Quaternions (2d course). iii, 30.

R) [The Algebra of Logic. ii, 15, O.-Jan.]

R) Elliott, Algebra of Quantics. Research. —?

WILLIAM E. BYERLY, Prof. of Math.

A.B., Harv., '71, and Ph.D., '73; Asst. Prof. Math., Cornell; Asst. Prof. Math., Harv.

*Differential and Integral Calculus (2d course). iii, 30.

R) Probs. in Dynamics of Rigid Bodies. iii, 30.

Harvard—continued

R)Picard, *Traité d'Analyse*. Vol. I. Research. — ?

PROFS. BYERLY and B. O. PIERCE.

R)Trig. Series, Intro. to Spherical Harmonics, Potential Function. iii, 30.

BENJAMIN O. PIERCE, Prof. of Math. and Nat. Philos.

A.B., Harv., '76; Ph.D., Leipzig, '79.

R)[Hydrostatics, Hydrokinematics, Force Functions and Velocity-Potential Functions and Uses. ii-iii, 30.]

R)Methods in Math. Physics. Research. — ?

R)Theory of Surfaces. — ?

R)[Elasticity. — ?]

WILLIAM F. OSGOOD, Asst. Prof. of Math.

A.B., Harv., '86, and A.M., '87; Ph.D., Erlangen, '90.

*Infinite Series and Products. iii, 15, O.-Ja.

*[Algebra. Properties of Polynomials, Variants. iii, 15, F.-Jun.]

*Algebra. Galois's Theory of Equations. iii, 15, F.-Jun.

R)Theory of Functions (2d course). iii, 30.

R)The Icosahedron and the Elliptic Modular Functions. Research. — ?

MAXIME BÔCHER, Asst. Prof. of Math.

A.B., Harv., '88; Ph.D., Göttingen, '91; Instr. in Math., Harv., '91-4.

*Theory of Equations. Invariants. iii, 15, O.-Ja.

R)Theory of Functions (intro). iii, 30.

R)[Functions def. by Linear Diff. Equations. iii, 30.]

R)Theory of Numbers. iii, 15, F.-Jun.

R)Euclid and the Hypotheses of Geometry. — ?

ASAPH HALL, Prof. of Math. (U. S. Navy.)

A.M. (hon.), Harv., '79; Ph.D. (hon.), Hamilton, '78; LL.D., Yale, '79, and Harv., '86; Director U. S. Nav. Observ.

R)Theory of Planetary Motions. iii, 30.]

R)Plasticity of the Earth. Research.

*Modern Methods in Geometry. Determinants. iii, 30.

Lie's Theories as applied to Differential Equations. iii, 30.

JOHNS HOPKINS.

20 Graduate Students, 1897-8.

THOMAS CRAIG, Prof. of Pure Math.

Ph.D., Johns Hopkins, '79.

Partial Diff. Equations of First and Second Orders. ii, 30.

Theory of Surfaces and Lines Traced on Surfaces. iii, 30.

Theory of Functions (adv). iii, 30.

Seminary. i, 30.

A. S. CHESSIN, Assoc. Prof. of Math.

A.M., Imperial Col., St. Petersburg, '79; Ph.D., Univ. of St. Petersburg, '84.

El. Theory of Functions. ii, 30.

Elliptic Functions. ii, 30.

Projective Geom. ii, 15, O.-F.

Calculus of Variations. ii, 15, F.-My.

A. COHEN, Instr. in Math.

Ph.D., Johns Hopkins, '94.

Theory of Invariants. iii, 15, O.-F.

Theory of Numbers. iii, 15, F.-My.

LELAND STANFORD, JR.

4 Graduate Students, 1897-8.

ROBERT E. ALLARDICE, Prof. of Math.

A.M., Edinburgh, '82; Gray Scholar in Math., same, '82; Baxter Scholar in Math., '82-3; Drummond Scholar in Math., '83-4; Asst. Prof. Math., same, '83-'92.

[Geometry of Three Dimensions. iii, 32.]

*Projective Geometry. ii, 15, S.-D.]

[Theory of Substitutions. ii, 17, Ja.-My.]

Theory of Functions. iii, 32.

Invariants. ii, 32.

CHARLES L. LITTLE, Prof. of Math.

A.B., Nebraska, '79; Ph.D., Yale, '85; Instr. in Math. and Civil Eng., Nebraska, '80-4; Assoc. Prof. of Civil Eng., '85-'90; Prof. of Civil Eng., '90-3.

*Differential Equations. iii, 32.

Theoretical Mechanics. ii, 32.
Vector Analysis. ii, 32.

RUFUS L. GREEN, Prof. of Math.

B.S., Indiana, '85, and A.M., '90; Instr. in Math., '85-6; Prof. of Pure Math., '87-'93.

*[Theory of Equations. ii, 32.]
[Modern Analytical Geometry. iii, 32.]
Higher Plane Curves. ii, 32.

MICHIGAN.

11 Graduate Students, 1897-8.

WOOSTER W. BEEMAN, Prof. of Math.

A.B., Mich., '70, and A.M., '73.

*Solid Analytic Geom. ii, 17, O.-F.
*Quaternions. ii, 17, F.-Jun.
Adv. Diff. and Integ. Calculus. ii, 34.
*Teachers' Seminary. ii, 34.
Higher Plane Curves. ii, 17, F.-Jun.
Diff. Equation. iii, 17, O.-F.
[Linear Diff. Equations. ii, 17, F.-Jun.]

ALEXANDER ZIWET, Junior Prof. of Math.

C.E., Karlsruhe (Ger.), '80.

Adv. Mechanics. ii, 17, O.-F.
*Adv. Mechanics. iii, 17, F.-Jun.
Partial Diff. Equations. ii, 34.

JOSEPH L. MARKLEY, Asst. Prof. of Math.

A.B., Haverford; Ph.D., Harvard.

Theory of Functions. iii, 34.
[Theory of Numbers. ii, 34.]
*Projective Geom. iii, 34.

JAMES W. GLOVER, Instr. in Math.

B.L., Michigan, '92; A.B., Harv. '93, A.M., '94, and Ph.D., '95; Morgan Fel. in Math., Harv., '92-4.

*Higher Algebra. iii, 34.
Theory of Substitutions. ii, 34.
Theory of Invariants. ii, 34.

MINNESOTA.

6 Graduate Students, 1897-8.

JOHN F. DOWNEY, Prof. of Math.

B.S., Hillsdale, '70, M.S., '73, and A.M., '77; C.E., Penn. State Col., '88; Prof. Math. and Astron., Penn. State Col., '74-'80.

Determinants. ii, 24.

Diff. Calculus (adv). ii, 24.
Integ. Calculus (adv). ii, 24.

ARTHUR E. HAYNES, Prof. of Math. in the Col. of Engineering.

B.S., Hillsdale, '75, and M.S., '77; Prof. Math., same, '77-'90; Prof. Math. Mich. Mining School, '90-3.

Hist. of Math. ii, 12.

HENRY T. EDDY (see 14).

Theory of Functions. ii, 24.
Hyperbolic and Elliptic Functions. ii, 24.

WILLIAM H. KIRCHNER, Asst. Prof. of Drawing.

B.S., Worcester Poly Inst., '87; Instr. in Math. Math. and Drawing, Rose Poly. Inst., '88-'90; Junior Prof. of Drawing, same, '90-3.

Spherical Projections. ii, 24.

C. H. HINTON, Asst. Prof. of Math.

A.M., Oxford (Eng.).

Coördinate Geom. (adv). ii, 24.
Quaternions. ii, 24.
Differential Equations. ii, 36.

MISSOURI.

3 Graduate Students, 1897-8.

Differential Equations. iii, 36.
Theory of Functions. iii, 36.
Theory of the Potential Function. iii, 36.

L. M. DEFOE, Asst. Prof. of Math.

A.B., Harvard, '93.

Modern Higher Algebra. iii, 36.
Higher Plane Curves. iii, 36.

NEW YORK.

7 Graduate Students, 1897-8.

POMEROY LADUE, Prof. of Math.

B.S., Michigan, '90; Instr. in Math., Mich., '92-3.

Solid Analytic Geom. ii, 30.
Diff. Equations. ii, 30.
Adv. Diff. and Integral Calculus. ii, 30.
Higher Algebra. ii, 30.

U of M

NORTHWESTERN.

2 Graduate Students, 1897-8.

HENRY S. WHITE, Prof. of Pure Math.

A.B., Wesleyan, '82; Ph.D., Göttingen, '90.

Algebra of Linear Transformation;

Eliminants and Resultants. ii, 18.

Higher Plane Curves. ii, 18.

THOMAS F. HOLGATE, Prof. of Applied Math.

A.B., Victoria Col., Toronto, '84, and A.M., '89; Fel., Clark, '90-3, and Ph.D., '93.

Functions of a Complex Variable. ii, 18.

Elliptic Functions. ii, 18.

PENNSYLVANIA.

10 Graduate Students, 1897-8.

1 Fel. in Math. and Astron. \$500 + tu.; 1 Schol. in Math. and Physics \$100 + tu.

EDWIN S. CRAWLEY, Asst. Prof. of Math.

B.S., Univ. of Pa., '82; Instr. Civ. Eng., '82-5; Instr. Math., '85-9; Ph.D., '92.

[Theory of Numbers. ii, 30.]

[Sem. Theory of Numbers. ii, fort., 30.]

Hist. of Math. i, 30.

Determinants. ii, 15, O.-F.

Plane Analyt. Geom. ii, 15, F.-My.

Higher Plane Curves. ii, 30.

GEORGE E. FISHER, Asst. Prof. of Math.

A.B., Cornell, '87; Instr. Math. Cornell '87-'93. Ph.D., Univ. of Pa., '95.

Diff. Equations. ii, 30.

Invariants and Covariants (2 yr. course). ii, 30. Pt. II. ii, 30.

Theory of Functions of Real Variable. ii, 30.

Theory of Functions of Complex Variable (2 yr. course). Pt. II. ii, 30.

Linear Diff. Equations. ii, 15, F.-My.

ISAAC J. SCHWATT, Asst. Prof. of Math.

Ph.D., Univ. of Pa., '93.

Infinite Series and Products. i, 30.

[Definite Integrals. ii, 15, O.-F.]

Functions of Bessel, Laplace and Lamé. ii, 30.

Elliptic Functions of Real Variable. ii, 30.

[Abelian Functions. ii, 15, F.-My.]

Application of Theory of Functions of Complex Variable. i, 15, F.-My.

GEORGE H. HALLETT, Instr. in Math.

A.B., Univ. of Pa., '93; Fel. in Phys., same, '93-4; A.M., same, '94; Ph.D., same, '96; Instr. Math., same, '94-8.

[Geom. of Three Dimensions. ii, 30.]

[Theory of Substitutions. ii, 30.]

Theory of Groups. Lects. ii, 30.

Theory of Surfaces. Lects. ii, 30.

ASST. PROFS. FISHER and SCHWATT.

Sem. Theory of Functions. ii, fort., 30.

PRINCETON.

6 Graduate Students, 1897-8.

H. B. FINE, Prof. of Math.

A.B., Princeton, '80; Ph.D., Leipzig, '85; Tutor, Asst. Prof., and Prof. of Math., Princeton.

*Theory of Functions (el). ii, 36.

Theory of Numbers and Higher Algebra. ii, 36.

Linear and Partial Diff. Equations. ii, 36.

Modern Analysis. ii, 36.

H. D. THOMPSON, Prof. of Math.

A.B., Princeton, '85, and D.Sc., '89; Ph.D., Göttingen, '92.

*Advanced Conic Sections, and Higher Plane Curves. ii, 36.

*Analyt. Geom. of Three Dimensions. ii, 36.

Higher Metrical Geom. ii, 36.

EDGAR O. LOVETT, Asst. Prof. of Math.

Ph.D., Univ. of Va., '94; Ph.D., Leipzig, '96; Lect. on Math., Univ. of Va. and University of Chicago.

Lie's Transformation Groups with Applications to Differential Equations and Geometry. ii, 36.

RADCLIFFE.

1 Graduate Student, 1897-8.

[See Harvard Courses marked R.]

Mathematical Conference.

M. BÔCHER.

*Theory of Equations. Invariants. iii, 15, O.-Ja.

DR. BOUTON.

*Mod. Meths. in Geom. Determinants.
iii, 30.

B. O. PEIRCE.

*Diff. and Integ. Calculus (adv). iii, 30.

W. F. OSGOOD.

*[Infinite Series and Products. i, 30.]

VANDERBILT.

4 Graduate Students, 1897-8.

WM. J. VAUGHN, Prof. of Math.

A.B., Ala., '57, and A.M., '60; LL.D., Univ.
Miss., '83; Tutor Math., same, '57-'60; Prof.
Math., '63-5; Prof. of Physics and Astronomy,
'71-3.

Theory of Equations. iii, 16, O.-Ja.

Quantics. iii, 8, F.-Mar.

Mod. Anal. Geometry. iii, 8, Ap.-My.

Theory of Numbers. iii, 16, O.-Ja.

Theory of Complex Functions. iii, 16.
F.-My.

Theory of Groups. iii, 16.

WELLESLEY.

3 Graduate Students, 1897-8.

ELEN L. BURRELL, Acting Prof. of
Pure Math.

A.B., Wellesley, '80.

*Diff. and Integ. Calculus. Hist. of
Math. iii, 35.

*Projective Geometry. iii, 35.

EVA CHÄNDLER, Assoc. Prof. of Math.

A.B., Mich., '78.

*Theory of Equations, with Determi-
nants. iii, 17, S.-Ja.

*Solid Analyt. Geom. iii, 17, F.-Jun.
Differential Equations. iii, 35.

WESTERN RESERVE.

— Graduate Students, 1897-8.

C. J. SMITH, Prof. of Math.

A.M., Res. Col., '73; Prof. of Math., Nat.
Philos. and Astron., same, '80-2; Prof. of
Math., Adelbert, '82.

*Analytic Geom. iii, 16, S.-Ja.

*Theory of Equations. iii, 17, F.-Jun.

*Diff. and Integ. Calculus. iii, 36.

A. H. PALMIÉ, Prof. of Math.

Ph.B., Cornell, '90; Fellow in Math., same,
'90-1; Instr. in Math. and German, Col. for
Teachers, N. Y., '91-2; Instr. in Math., Col.
for Women, W. R. U., '92.

Higher Plane Curves. iii, 16, S.-Ja.

Theory of Functions. iii, 17, F.-Jun.

Diff. Equations. iii, 16, S.-Ja.

*Projective Geom. iii, 17, F.-Jun.

*Quaternions. iii, 17, F.-Jun.

Theory of Substitutions. iii, 16, S.-
Ja.

WISCONSIN.

7 Graduate Students, 1897-8.

CHARLES A. VAN VELZER, Prof. of
Math.

B.S., Cornell, '76; Instr. in Math., same, '76-7;
Fel. in Math., Johns Hopkins, '78-'81; Ph.D.,
same; Instr. in Math., Wisconsin, '81; Asst.
Prof. '83-5.

*Diff. Equations. iii, 36.

*Analyt. Geom. of Two Dimensions.
iii, 36.

*Analyt. Geom. of Three Dimensions.
ii, 36.

Modern Algebra. ii, 36.

*Theory of Numbers. ii, 36.

CHARLES S. SLICHTER, Prof. of Applied
Math.

M.S., Northwestern, '85; Instr. in Math., Wis-
consin, '86-9; Asst. Prof. '89-'92.

*Theoretical Mechanics. iii, 36.

Potential Theory. ii, 36.

[Partial Diff. Equations of Math.
Physics. ii, 36.]

Theoretical Hydrodynamics. ii, 36.

Theory of Elasticity. ii, 36.

ERNEST B. SKINNER, Asst. Prof. of
Math.

A.B., Ohio Univ., '88.

[Quaternions (intro). ii, 36.]

*Theory of Equations. ii, 36.

*Theory of Groups.

L. WAYLAND DOWLING, Instr. in Math.

Scholar and Fellow, Clark, '92-5; Ph.D., same,
'95.

*Diff. and Integral Calculus (adv). ii,
18, S.-F.

*Theory of Single Periodic Functions.
ii, 18, F.-Jun.

Wisconsin — continued

- Elliptic Functions. ii, 36.
 *Proj. Geom. ii, 36.
 Theory of Functions. iii, 36.

YALE.

48 Graduate Students, 1897-8.

Math. Club holds fortnightly meetings. Hillhouse
 Math. Coll., 3,000 vols. Math. Seminary Room,
 Engineers' Club.

- J. E. CLARK, Prof. of Math.
 A.B., Mich., '56; A.M., Yale and Mich., '75;
 Prof. of Math., Antioch.
 Determinants and Diff. Equations. ii,
 32.
- J. W. GIBBS, Prof. of Math. Physics.
 A.B., Yale, '58; Ph.D., same, '63; LL.D.,
 Williams, '93.
 Vector Analysis. ii, 12, O.-D.
 Vector Analysis (adv). ii, 20, Ja.-Jun.
 Miscellaneous Applica. of Vect. Anal.
 i, 32.
 Electro-Magnetic Theory of Light. ii,
 32.
 Elliptic and Parabolic Motion. i, 32.
 [Multiple Algebra. i, 32.]
 [Thermodynamics and Properties of
 Matter. ii, 32.]
 [Electricity and Magnetism. i, 32.]
- J. P. PIERPONT, Asst. Prof. of Math.
 Ph.D., Vienna, '94.
 Intro. to Higher Analysis. iii, 32.
 Functions of a Complex Variable. ii,
 32.
 Theory of Numbers. ii, 32.
- A. W. PHILLIPS, Prof. of Math., and
 Dean of Graduate School.
 Ph.B., Yale, '73; A.M., Trinity, '75, and Ph.D.,
 '77.
 *Calculus. ii, 32.
- C. B. RICHARDS, Prof. of Mech. Eng.
 A.M., Yale, '84.
 Applied Mechanics. — ?
 Thermodynamics. — ?
 Machine Design. — ?
- A. J. DuBOIS, Prof. of Civ. Eng.
 Ph.B., Yale, '69, C.E., '70, and Ph.D., '73;
 Prof. of Eng., Lehigh.
 Mechanics Applied to Eng. iii, 32.
 Construction and Design in Civ. Eng.
 iii, 32.
- S. E. BARNEY, Asst. Prof. of Civ. Eng.
 Ph.B., Yale, '79, and C.E., '85.
 *Railway Surveying. 3 wks. in Sept.
 Geodesy and Pract. Astron. — ? F-Jun.
 Design and Construct. of Sewers and
 Sewage Disposal — ? O.-D.
- WM. BEEBE [see 13].
 *Surveying. iii, 16, F.-Jun.
 Computation of Orbits. ii, 32.
- P. F. SMITH, Asst. Prof. of Math.
 Ph.B., Yale, '88, and Ph.D., '91.
 Plane Analt. Geom. (adv). ii, 32.
 Higher Geom. ii, 32.
- W. M. STRONG, Tutor in Math.
 A.B., Yale, '93; A.M., Cornell, '94.
 *Mechanics. ii, 32.
- JACOB WESTLUND, Instr. in Math.
 A.B., College of Orebro, Sweden, '85.
 *Anal. Geom. ii, 32.
- G. P. STARKWEATHER, Inst. in Applied
 Mechanics.
 M.E., Yale, '94.
 Mechanics. ii, 32.
- H. E. HAWKES, Tutor in Math.
 A.B., Yale, '96.
 *Algebra (Lects). ii, 32.

13. ASTRONOMY.**BROWN.**

1 Graduate Student, 1897-8.

Ladd Observatory is equipped with 12-in. refractor,
 to which spectroscope and filar micrometer may
 be attached; 3-in. combined transit and zenith
 telescope; sidereal and mean time clocks, chrono-
 graph.

WINSLOW UPTON, Prof. of Astron. and
 Dir. of Ladd Observatory.

A.B., Brown, '75; A.M., Cincinnati, '77; Asst.
 Harvard Observ., '77-9; Asst. Eng., U. S. Lake
 Survey, '79-'80; Computer and Jun. Prof. of
 Meteorol., U. S. Sig. Office, '81-3.

Geodetic Applications, Method of Least Squares. iii, 33.
Theory of Planetary and Cometary Orbits. iii, 33.

CALIFORNIA.

1 Graduate Student, 1897-8.

The Lick Observatory, with its facilities for adv. astron. work, is a dept. of the Univ. A limited number of graduate and special students are admitted there. The following courses are given at Berkeley, where there is a students' Observatory.

ARMIN O. LEUSCHNER, Asst. Prof. of Astron. and Geodesy.
A.B., Michigan; Ph.D., Berlin.
Perturbations. iv, 32.

FREDERICK H. LEARES.

B.S., California.

Theoretical Astron. (adv). ii, 32.

*History of Astron. iii, 16, Au.-D.

*Theoretical Astron. iv, 32.

*Least Squares. ii, 16, Au.-D.

*[Mechanical Quadratures. iii, 16, Ja.-My.]

*[Interpolation and Use of Tables. iii, 16, Ja.-My.]

Practical Astron. (adv). i, 32.

CHICAGO.

12 Graduate Students, 1897-8, and 4 in Summer Quarter, '97.

A limited number of qualified graduate students are admitted to the Yerkes Obs. at Williams Bay, Wis. The equipment includes a 40-inch refractor, with solar and stellar spectroscopes and other attachments, a 12-inch refractor with photographic and visual objectives, 24-inch heliostat, two 24-inch reflectors, concave grating spectroscope, spectroheliograph, etc. The courses in theoretical and practical astron. are given at the Univ. in Chicago, where there is a small students' Obs. 2 Fels., 1 Schol.

Research work at Yerkes Obs., to be conducted by the following instructors:

SHERBURNE W. BURNHAM, Prof. of Pract. Astron.

A.M., Yale, '78; Obs. at Dearborn Obs., '77-'81; Obs. at Washburn Obs., '81-2; Astron., Lick Obs., '88-'92.

Research work.

EDWARD E. BARNARD, Prof. of Pract. Astron.

A.M., (hon.), Univ. of Pacific, '89; Sc.D., Vanderbilt, '93; in charge Vanderbilt Obs., '83-7; Astron., Lick Obs., '87-'95.

Research work.

F. L. O. WADSWORTH, Asst. Prof. of Astrophysics.

E.M., Univ., of Ohio, '88; S.B., and M.E., '89; Asst. in Physics, same, '89; Fel. in Physics, Clark, '89-'90; Asst. in Physics, same, '90-1; Senior Asst., Washington Astrophysical Obs., '93-4.

Research work.

GEO. E. HALE, Assoc. Prof. of Astrophysics and Dir. of the Yerkes Obs.

S.B., Mass. Inst. Tech., '90; Dir. Kenwood Astrophysical Obs., '90; Prof. of Astrophysics, Beloit, '91; Lect. in Astrophysics, Northwestern, '91; Lect., Beloit, '93; Sc.D., West Univ. of Pa., '97.

Solar Physics. The Photosphere. Use of Photoheliograph. viii, 12, Jul.-S. Spectroscopic Obs. of Sun Spots. Ap.-Jun. The Chromosphere, Prominences and Faculae. viii, 12, O.-D. Measurement and Reduction of Photographs made with Solar Spectrograph, Photoheliograph, and Spectroheliograph. viii, 12, Ja.-Mar.

Stellar Spectroscopy. viii, 12, O.-D., and viii, 12, Ja.-Mar.

Astrophysical Research.

Research in Solar Physics.

Work at the University to be conducted by the following instructors:

KURT LAVES, Instr. in Astronomy.

Ph.D., Berlin, '91; Asst., Royal Obs., Berlin, '93; Docent, Chicago, '93-4; Reader, '94-5; Asst. '95-6; Assoc. '96-7.

*[Theory of the Determination of an Elliptic Orbit from three complete obs., with a numerical example. iv, 12, Jul.-S.]

Theory of Absolute Perturbations. iv, 12, Ja.-Mar.

Theory of the Attractions and Figures of the Heavenly Bodies. iv, 12, Ap.-Jun.

[Special Perturbations. iv, 12, O.-D.] Adv. Analyt. Mechanics. iv, 12, Ja.-Mar.

Chicago—continued

*[Spherical and Practical Astron. I, II. iv, 12, Ja.-Mar., also Ap.-Jun.]
[Theory of a Rotating Body. iv, 12, Ap.-Jun.]

*Selected chapters of Spher. and Pract. Astron. iv, 12, O.-D.

*Determination of Time, Lat., and Long. with Pract. Work in Obs. iv, 12, Jul.-S.

*[Determination of Orbit of Double Star. iv, 12, Ap.-Jun.]

Analytical Mechanics. Statics. iv, 12, O.-D.

[Spherical Harmonics. iv, 12, O.-D.]

Dynamics of a System of Bodies based upon the Lectures of Jacobi. iv, 12, Jul.-S.

Theory of Satellites of Jupiter and Saturn. iv, 12, Ap.-Jun.

Astronom. Seminar. ii, 12, Jul.-S.

FOREST RAY MOULTON, Asst. in Astron. A.B., Albion Col., '94; Instr. in Astron. and Asst. in the Obs., same, '92-4.

[Theory of Double Star Orbits. iv, 6, Jul.-Au.]

*[Hist. of Astron. iv, 6, Au.-S.]

*Gen. Astron. v, 12, O.-D.

*Physical Astron. iv, 12, Ja.-Mar.

*Hist. of Physical Sci. v, 12, Ja.-Mar.

*[Theory of Parabolic Orbits. iv, 12, Ap.-Jun.]

[Secular Variations, Gauss' Method. iv, 12, O.-D.]

*Eclipses and Occultations. iv, 12, Jul.-S.

*[Obs. Work. iv, 12, Ap.-Jun.]

*Determination of Parabolic Orbit of Comet. iv, 12, Ap.-Jun.

*[Theory of Probability and Method of Least Squares. iv, 12, O.-D.]

The Problem of Three Bodies. iv, 12, Jul.-S., and O.-D.

Dynamics of a System of Bodies based upon the Lectures of Jacobi. iv, 12, Ap.-Jun.

[Motion of Heavenly Body in Resist- ing Medium. iv, 12, O.-D.]

COLUMBIA.

3 Graduate Students, 1897-8.

[All Graduate Courses in Columbia open to Barnard Graduate Students.]

Astron. Obs. contains a 46-in. transit; combined transit and zenith instrument; an equatorially mounted refractor of 5-in. apert., with spectro- scope; a diffraction spectroscopy with grating; an equat. refracting telescope of 13-in. apert. with correcting lens for photographic work; sidereal and mean-time clocks; measuring and photographic machines.

JOHN K. REES, Prof. of Astron. and Di- rector of Obs.

A.M., E.M., Ph.D., Columbia; Asst. in Math., Columbia, '73-6; Prof. Astron., Wash. Univ., '76-'81; Prof. Pract. Astron. and Geodesy, Columbia, '81-'92.

*Spher. and Pract. Astron. ii, and obs., 30. (With Dr. Davis.)

*Geodesy. iii, 1½ yrs. (With Prof. Jacoby and Dr. Davis.)

Spher. and Pract. Astron. (adv). ii, and obs., 2 yrs. (With Prof. Jacoby.)

HAROLD JACOBY, Adj. Prof. Astron.

A.B., and Ph.D., Columbia; Asst. Astron., U. S. Eclipse Exped. to W. Africa, '89-'90.

Theoretical Astron. i, and computa- tions, 2 yrs.

Reduction of Photographic Star Plates. i, and practical work, 2 yrs.

HERMAN S. DAVIS, Tutor in Astronomy.

A.B., and A.M., Princeton; Ph.D., Columbia; Asst. U. S. Eclipse Exped. to W. Africa, '89-'90; Fellow in Astronomy, Columbia, '93-5.

Stellar parallax, declinations and proper motions of 56 stars, etc. ii, 30.

Spherical and Practical Astron. ii, and obs., 30.

CORNELL.

3 Graduate Students, 1897-8.

1 Fel. \$500 and 1 Grad. Schol. \$300, assigned to Dept. Math. and Astron.

ESTEVAN A. FUERTES, Dir. of Col. of Civil Eng. and Prof. of Civil Eng. Dir. N. Y. State Weather Bureau.

*Spherical Astron. Observations. ii, 12.

D. A. MURRAY [see 12].

*Descriptive Astron. ii, 32.

*Physical and Math. Astron. ii, 32.

HARVARD.

o Graduate Students, 1897-8.

Astronom. Obs. founded for scientific research, equipped with instruments of the first class, a lib. of 20,000 books and pamphlets; has fund for maintenance, increase and pub. In the Henry Draper memorial dept. an extensive study of spectra and other phys. props. of stars is carried on. Boyden fund sustains observations at great elevation. Photogr. study of stars especially provided for. Facilities freely offered to astronomers; also sometimes to special students in astron., who should apply to Prof. E. C. Pickering, Director.

ROBERT W. WILLSON, Instr. in Astron.

A.B., Harv., '73; Ph.D., Würzburg, '86.

*Practical Astron. Use of Instruments. iii, 30.

ASAPH HALL, Prof. of Math. (U. S. Navy) [see 12].

*Spherical Astronomy. — ?

JOHNS HOPKINS.

11 Graduate Students, 1897-8.

The equipment consists of an equatorial telescope of 9½ inches aperture, a meridian circle of 3 in. aperture with circles 2 ft. in diam. reading to seconds, a small meridian transit instrument, and several others.

C. L. POOR, Assoc. Prof. of Astron.

Ph.D., Johns Hopkins, '92.

Theory and Use of Astron. Instruments. ii, 30.

Construction of Planetary Tables. iii, 15, F.-My.

Theoret. and Pract. Astron. ii, 30.

Astron. Sem. in conjunction with Physical Sem.

Pract. work with instruments. Daily.

A. S. CHESSIN [see 12].

Celestial Mechanics. iii, 15, O.-Ja.

MICHIGAN.

2 Graduate Students, 1897-8.

Detroit " Observ. provided with Fltz 13-in. refract. telescope, meridian circle, sid. clock. Special obs. for instruction.

ASAPH HALL, Jr., Prof. of Astron. and Dir. of Obs.

Ph.B., Yale, '88, and Ph.D., '89; Asst. Naval Obs., '82-5; Asst. Astron., Yale, '85-9; Asst. Astron., Naval Obs., '89-'92.

Computation of Orbits, Special Perturbations, and Correction of Orbits. v, 34.

Math. Theory of Planetary Motions. iii, 17, O.-F.

Use of Instruments. — ? 34.

SIDNEY D. TOWNLEY, Instr. in Astron.

B.S., Wisconsin, '90, and M.S., '92; Sc.D., Mich., '97 Fel. and Asst., Wis., '90-2; Fel. and Asst., Lick Obs., '92-3.

*Least Squares and Empir. Curves. ii, 17, O.-F.

Spherical Astron. iii, 34.

MINNESOTA.

5 Graduate Students, 1897-8.

Observatory provided with a 10½ in. equatorial telescope, transit circles, chronographs, compound spectroscope, filar micrometer. Repsold photographic measuring machine. Correcting lens and other appliances by which the equatorial may be converted into a photographic telescope.

FRANCIS P. LEAVENWORTH, Prof. of Astronomy and Dir. of Obs.

A.B., Ind., '80, A.M., '87; Asst. in Obs. Univ. of Va., '88; Dir. Obs., Haverford, '83-'93.

Practical Astronomy. iv, 36.

Computation of Orbits. iv, 36.

Astro-photography. iv, 36.

Astrophysics. iv, 36.

*Practical Astronomy. iv, 36.

MISSOURI.

— Graduate Students, 1897-8.

MILTON UPDEGRAFF, Prof. of Astron. and Dir. of Obs.

B.C.E., Univ. of Wis., '84; M.S., same, '86.

Theoretical Astronomy. iii, 36.

NORTHWESTERN.

— Graduate Students, 1897-8.

GEORGE W. HOUGH, Prof. of Astron.

A.B., Union, '56, A.M., '61, and LL.D., '91; Asst. Astron., Cincin. Obs., '59; Astron. Dudley, Obs., Albany, '60-3; Lect. on Astron.,

Northwestern — continued

Albany Fem. Col., '62-6; Director Dudley Obs., '63-'74; Prof. Astron., Chicago, and Dir. of the Dearborn Obs., '79-'87.

Practical Astronomy. viii, 36.

PENNSYLVANIA.

3 Graduate Students, 1897-8.

Flower Obs. consists of an equatorial and meridian building, and the residence of the Director containing the Astron. Lib. and computa. rooms for orig. investigators. The princ. instruments are an equatorial, 18-in. aperture with spectroscope, a meridian circle and zenith telescope, each of 4-in. aperture, and a 3-in. of universal transit. Plan of Grad. work includes systematic obs. of comets and small planets, investigations of variations of latitude, and spectroscopy. 1 Fel. (see 12).

CHARLES L. DOOLITTLE, Prof. of Math. and Astron., and Dir. of Obs.,

C.E., Univ. of Mich., '74; Prof. of Math. and Astron., Lehigh, '75-'95; Sc.D., Univ. of Mich., '97.

Meth. of Least Squares. ii, 15, O.-F.

Reduction of Stellar Coördinates. ii, 15, F.-My.

Hist. of Astron. i, 30.

ERIC DOOLITTLE, Instr. in Astron.

C.E., Lehigh, '91; Instr. Math. and Astron., Univ. of Ia., '92.

Pract. Astron. iii, 30.

Theoret. Astron. iv, 30.

Astron. Sem. i, 30.

PRINCETON.

4 Graduate Students, 1897-8.

Halsted Obs. appropriated to scientific work, esp. in Astrophysics. Equatorial, 23-in. aperture, made by Clark. Highest power spectroscope fitted for visual and photographic work. Obs. of instruction, devoted to use of students, contains $9\frac{1}{4}$ -in. Clark equatorial, besides full complement of other instruments. 1 Fel. \$600 open to students of this dept.

C. A. YOUNG, Prof. of Astron.

A.B., Dartmouth, '53; Ph.D., U. of Pa., '70; Ph.D., Hamilton, '70; LL.D., Wesleyan, '76; Prof. of Math. and Astron., W. Reserve, '57-'66; Prof. of Nat. Philos. and Astron., Dartmouth, '66-'77.

Theoret. Astron. and Calculation of Orbits. i, 36.

TAYLOR REED, Asst. Prof. of Astron.

A.B., Princeton, '86, and A.M., '87.

Pract. Astron. ii, 36.

RADCLIFFE.

0 Graduate Students, 1897-8.

The officers of the Obs. desire to encourage individual work, and to that end will advise students in their subsequent investigations and secure the publication of any valuable results. Instruction is under direction of Prof. Pickering.

ARTHUR SEARLE.

*Descriptive Astron. iii, 30.

J. R. EDMANDS.

*Preparatory Pract. Astron. iii, 30.

*Instruments, Measurements, and Methods of Precision. i, 30.

VANDERBILT.

3 Graduate Students, 1897-8.

WM. J. VAUGHN [see 12].

Practice and Theory of Astron. iii, 32.

Theory of Instruments, Cel. Mech., Perturbations. iii, 32.

WELLESLEY.

— Graduate Students, 1897-8.

ELLEN HAYES, Prof. of Applied Math.

A.B., Oberlin, '78.

*Geodynamics. iii, 17, F.-Jun.

*Theoretical Astron. Determination of Orbits. iii, 35.

WISCONSIN.

4 Graduate Students, 1897-8.

Graduate Students and others desiring to pursue adv. astron. studies are received in Washburn Obs. as assts. and take part in regular observations with equatorial telescopes or meridian circle. Facilities for original work are afforded to such students, and valuable results will be printed in publications of the Obs. Hours and amt. of work determined by conf. bet. instr. and students.

GEORGE C. COMSTOCK, Prof. of Astron.
and Director of Washburn Obs.

Ph.B., Mich., '77; Asst. in Ann Arbor Obs., '77-8; Asst. in Washburn Obs., '79-'83; Prof. Math. and Astron., Ohio State Univ., '85-7; Director Washburn Obs., '87.

*Gen. Astron. iii, 18, S.-F.

*Astrophysics. iii, 18, F.-Jun.

*Obs. Work and Methods. iii, 36, S.-Jun.

*Theoretical Astron. iii, 18, S.-F.,
and ii, 18, F.-Jun.

YALE.

1 Graduate Student, 1897-8.

WM. BEEBE, Asst. Prof. of Math. and Astron.

A.B., Yale, '73.

*Descriptive Astron. ii, 16, O.-F.

*Practical Astron. ii, 32.

Computation of Orbits. ii, 32.

S. E. BARNEY [see 12].

Geodesy and Prac. Astron. — ?

14. PHYSICS.

[See also 12 and 13.]

BARNARD.

5 Graduate Students, 1897-8.

[See Columbia Courses marked B.]

BROWN.

8 Graduate Students, 1897-8.

CARL BARUS, Prof. of Physics.

Ph.D., Würzburg, '79; Asst. to Prof. Kohlrausch, '79-'80; Physicist, U. S. Geol. Survey, '80-'92; Prof. of Meteorol., U. S. Weather Bureau, '92-3; Physicist, Smithsonian Inst., '93-5.

*Dynamics and Potential, Elastics, Hydrodynamics. iii, 33.

*Harmonic Analysis.

*Thermodynamics.

Behavior of Matter through Long Ranges of Temperature.

Behavior of Matter through Long Ranges of High Pressure.

[Time in last two courses arranged according to needs of students. All the work is original research.]

ALBERT DEF. PALMER, Assoc. Prof. of Physics.

B.P., Brown, '91, and Ph.D., '95; Instr., Brown, '93-6.

*Dynamics. iii, 12, S.-D.

*Lab. Course (adv). (With Prof. Barus and Mr. Watson.)

Electricity and Magnetism. iii, 33.

BRYN MAWR.

5 Graduate Students, 1897-8.

1 Fellowship, \$525.

ARTHUR S. MACKENZIE, Assoc. Prof. of Physics.

A.B., Dalhousie, '85; Tutor in Math., '87-9; Fel., Johns Hopkins, '90-1; Ph.D., same, '94.

Heat Conduction. ii, 30.

Physical Optics. i, 30.

*Spectrum Analysis and Polarization. ii, 15, O.-F.

*Sound in Relation to Music. ii, 15, F.-Jun.

EDGAR BUCKINGHAM, Assoc. in Physics and Phys. Chem.

A.B., Harv., '87; Asst. in Physics, '88-9; Asst. in Physics, Univ. of Strassburg, '88-90; Asst. in Physics, Harv., '91-2; Tyndall Schol., Harv., '92-3; Ph.D., Leipzig, '93.

Dynamics. ii, 30.

*Thermodynamics, Thermochemistry, Theory of Solutions. ii, 15, O.-F.

*Guldberg and Waage's Mass Law; Reaction Velocities; Gibb's Phase Rule and Chemical Equilibria, Electrochemistry. ii, 15, F.-Jun.

DRS. MACKENZIE and BUCKINGHAM.

Seminary. Monthly.

Journal Meeting. iii, monthly.

CALIFORNIA.

6 Graduate Students, 1897-8.

FREDERICK SLATE, Prof. of Physics.

B.S., Brooklyn Polytechnic.

Special Research. Lab. 32.

Dynamics of Rotation. ii, 32.

California — continued

Readings and Discussions. Special Topics. ii, 32.

WILLIAM J. RAYMOND, Asst. Prof. of Physics.

B.S., Univ. of Cal.

*Absolute Electr. Measurements. iii, 16, Ja.-My.

*Harmonic Motion. ii, 16, Ja.-My.

E. PERCIVAL LEWIS, Asst. Prof. of Physics.

Ph.D., Johns Hopkins.

Spectroscopy. ii, 16, Ja.-My.

CHICAGO.

35 Graduate Students, 1897-8; and 57 in Summer Quarter, '97.

Ryerson Physical Lab. and all equipments necessary for scientific research. 4 Fels.

ALBERT A. MICHLSON, Head Prof. of Physics.

Instr. in Phys. and Chem., U. S. Naval Acad., '75-9; Ph.D. (hon.), West. Reserve, '86; Prof. Phys., Clark, '89-'92.

Physical Computations. — ? Jul.-Au. Exper. Physics. x, 48, Jul.-Jun. (With Prof. Stratton.)

Theoretical Physics. iv, 24, O.-Mar.

*Molecular Physics. iv, 6, My.-Jun.

Research course. xx, Jul.-Jun.

[Spectrum Analysis. x, 6, Ap.-My.]

[Application of Interference Methods. x, 6, Ap.-My.]

Velocity of Light. x, 6, Ap.-My.

SAMUEL W. STRATTON, Assoc. Prof. of Physics.

S. B., Univ. of Ill., '85; Instr. in Math. and Phys., same, '85-8; Asst. Prof. of Phys., '88-'90; Prof. of Phys., '90-2; in charge Dept. Electrical Engineering, '91-2.

*Physical Manipulation. x, 12, Ap.-Jun. Lab. Methods. x, 12, O.-D.

*Radiation. v, 6, Ap.-My.

*Electricity and Magnetism. v, 6, My.-Jun.

*Adv. Exper. Physics. Fundamental Meas. x, 12, O.-D.

*Adv. Exper. Physics. Heat and Light. x, 12, Ja.-Mar.

*Adv. Exper. Physics. Electricity and Magnetism. x, 12, Ap.-Jun.

*Adv. Exper. Physics. Selected Probs. x, 12, Jul.-S.

*Physical Manipulation. Selected Probs. x, 12, Jul.-S.

*Gen. Physics for Teachers. v, 6, Jul.-Au.

Exper. Physics. x, 48, Jul.-Jun. (With Head Prof. Michelson.)

*Mechanics. v, 12, O.-D.

*Theory of Heat. v, 6, F.-Mar.

*Adv. Exper. Physics. Fundamental Meas. x, 12, O.-D.

*Adv. Exper. Physics. Heat and Light. x, 12, Ja.-Mar.

*Adv. Exper. Physics. Electricity and Magnetism. x, 12, Ap.-Jun.

*Adv. Exper. Physics. Selected Probs. x, 12, Jul.-S.

*Mechanical Drawing and Curve Tracing. x, 12, Ja.-Mar.

*Physical Computations. v, 6, Jul.-Au.

CHARLES RIBORG MANN, Assoc. in Phys.

A.B., Columbia, '90; A.M., same, '91; Fellow in Physics, same, '90-2; John Tyndall Fellow, same, '92-5; Ph.D., Univ. of Berlin, '95; Assist., Chicago, '96-7.

*Sound. v, 6, Ja.-F.

*Physical Manipulation. x, 12, Ap.-Jun.

*Lab. Methods. x, 12, O.-D.

*Physical Manipulation. Selected Probs. x, 12, Jul.-S.

CLARK.

4 Graduate Students, 1897-8.

Two Fels. \$600 each, two \$400 each; two Schols. \$200 each, two \$100 each. Lab. open daily from 8 to 6. Research by each student under the personal direction of the professor.

ARTHUR G. WEBSTER, Asst. Prof. of Physics.

A.B., Harv., '85; Instr. in Math., '85-6; Parker Fellow, '86-9; Ph.D., Berlin, '90.

Dynamics. General Methods, Canonical Equations. Systems of Particles, Rigid Bodies. 50 lects.

Newtonian and Logarithmic Potential Function, Attraction of Ellipsoids. 20 lects.

Elasticity, Hydrodynamics, Wave Motion, Dynamical Basis of Sound and Light. 45 lects.

[Dynamics of Cyclic and Oscillatory Systems, with Applications to Theory of Electricity, Sound and Light. 15 lects.]

Electricity and Magnetism. 60 lects.

[Optics. Physical and Geometrical. Elastic and Electromagnetic Wave Theories. 60 lects.]

[Thermodynamics, Thermo- and Electro-Chemistry. Kinetic Theory of Gases. 45 lects.]

[The Partial Differential Equations of Mathematical Physics. 60 lects.]

[Linear Differential Equations.]

[Elliptic Functions.]

Orthogonal Systems and Curvilinear Coordinates.

Colloquium. Discussions and Reports. Weekly.

COLUMBIA.

23 Graduate Students, 1897-8.

[Courses marked B are open to Barnard Graduate Students.]

The dept. offers twenty additional laboratory courses. John Tyndall Fel. \$648, Barnard Fel. \$500, for research here or abroad.

OGDEN N. ROOD, Prof. of Physics.

A.B., Princeton, '52.

*Sound. ii. and lab. vi, 16, O.-F.

*Magnetism and Electricity. ii, and lab. vi, 14, F.-Jun.

B)*Light. iii, and lab. iv, 16, O.-F.

B)*Heat. iii, and lab. iv, 14, F.-Jun.

ROBERT S. WOODWARD, Prof. of Mechanics.

C. E., Mich., '72, and Ph.D., '92; Asst. Eng. U. S. Lake Survey, '72-'82; Asst. Astron. U. S. Transit Venus Com., '82-4; Astron. U. S. Geol. Survey, '84-'90; Asst. U. S. Coast Survey, '90-3; Prof. Mechanics, Columbia, '93.

B)Theoretical Mechanics (adv). ii, 30.

B)Theory of the Potential Function. ii, 30.

B)Geodynamics. ii, 30.

B)Mathematical Theory of Elasticity. ii, 30.

WILLIAM HALLOCK, Adj. Prof. of Physics.

A.B., Columbia, '79; Ph.D., Würzburg, '81; Phar.D., Nat. Col. of Pharm., Wash., '92; Asst. in Lab., Würzburg, '80-2; Physicist U. S. Geol. Survey, '82-'91; Prof. of Physics, Columbian, '84-6; Adj. Prof., Columbia, '92.

*Electricity. ii, and lab. viii, 16, O.-F.

*Exact Electr. Measurements. ii, and lab. viii, 14, F.-Jun.

Constructing and Designing Apparatus. i, 16, O.-F.

B)Undulatory Theory of Light. ii, 14, F.-Jun.

MICHAEL I. PUPIN, Adj. Prof. of Mechanics.

A.B., Columbia, '83; Ph.D., Berlin, '89; Tyndall Fel. in Science; Instr. in Math. Physics and E.E., Columbia, '90-2; Adj. Prof. in Mech., '92.

*Thermodynamics. iii, 16, O.-F.

*Theory of Dynamo and Motor. iii, 16, O.-F. (With Mr. Freedman.)

*Intro. to Electromagn. Theory. ii, 14, F.-Jun.

*Theory of Alternators and Transformers. iii, 16, O.-F.

B)Maxwell's Theory of Electr. and Magnetism. ii, 30.

B)Thermodynamics (adv). ii, 30.
Theoretical Electr. Engineering (adv). iii, 14, F.-Jun.

B)Theory of Oscillations. ii, 30.

B)Electromagnetic Theory of Light. ii, 30.

B)Theory of Bessel's Functions and Spherical Harmonics. i, 30.

J. C. PFISTER, Tutor in Mechanics.

A.B., Columbia, '89, and A.M., '90.

B)*Thermodynamics (el). ii, 16, O.-F.

B)*Theoretical Mechanics. ii, 30.

HERSCHEL C. PARKER, Tutor in Physics.

Ph.B., Columbia, '90; Fel. in Physics and Asst. Instr., same, '90-1; Asst., '91-3; Tutor, '93.

*Electrical Manipulation. i, 16, O.-F.

*Theoret. Comparison of Electr. Methods. ii, 14, F.-Jun.

REGINALD GORDON, Tutor in Physics.

*The Steam Engine. i, 14, F.-Jun.

Meteorology (el). i, 16, O.-F.

Columbia—*continued*

WM. H. FREEDMAN, Tutor in Mechanics.
C.E., Columbia, '89; E.E., Columbia, '91; Tyn-
dall Fel. '91-2; Tutor in Electr. Engin., '95;
Tutor in Mech. Engin., '95.

Theory of Dynamo and Motor (intro).

CORNELL.

15 Graduate Students, 1897-8.

Franklin Hall is devoted exclusively to Physics.
For magnetic and other measurements by the
magnetic needle, there is a special building free
from iron. There is also a special lab. of elec-
trical engineering in the Franklin Hall Annex.
The dept. issues the "Physical Review." Fel.
\$500, 1 Grad. Schol. \$300.

EDWARD L. NICHOLS, Prof. of Physics.
B.S., Cornell, '75; Ph.D., Göttingen, '79; Fel-
lows, Johns Hopkins, '79-'80; Prof. Phys-
ics and Chemistry, Central Univ., '81-3; Prof.
Physics and Astron., Univ. of Kansas, '83-7.

Research and Thesis Work in Exper.
Physics. v-x, 32.

*Spectroscopy (adv). iii, 32.

*Seminary. Readings, Discussions, and
Reports. ii, 32.

The Galvanometer and its Uses. i, 12,
O.-D.

Photometry. i, 11, Ja.-Mar.

Theory of the Telephone. i, 9, Ap.-
Jun.

GEORGE S. MOLER, Asst. Prof. of Physics.
B.M. E., Cornell, '75; Instr. in Physics, same,
'75-'80.

*Photog. (adv), with especial reference
to research. ii, 20, O.-Mar.

*Heat and applied Electricity. Lab.
ii, 32.

ERNEST G. MERRITT, Asst. Prof. of
Physics.

M.E., Cornell, '86; Fellow in Physics, '86-7;
'88-9; Instr., '89-'92.

*Lab. Prac. in General Physics (adv).
iii-vi, 32.

*Thermometry and Calorimetry. iii, 32.
[Theoretical Physics, Electricity and
Magnetism. iv, 32.]

Theoretical Physics. Mechanics and
Thermodynamics. iv, 32.

Recent Advances in Exper. Physics. i,
32.

Electri. and Magn. (adv). iii, 32.

FREDERICK BEDELL, Asst. Prof. of
Physics.

A.B., Yale, '90; Fellow in Electrical Eng., Cor-
nell, '91-2; Ph.D., '92; Instr., '92-3.

*Magnetism of Iron. ii, 12, O.-D.

*Theory of Electricity and Magnetism.
ii, 20, Ja.-Jun.

*Theory of Alternate Currents. ii, 20,
Ja.-Jun.

*Absolute Meas. in Electr. and Magn.
iii, 32.

FREDERICK J. ROGERS, Instr. in Physics.

B.S., Kansas State Agr. Col.; M.S., Cornell,
'91.

*Thermodynamics. ii, 32; also i, 32.

JOHN S. SHEARER, Instr. in Physics.

B.S., Cornell, '93; Asst. in Phys., '93-4.

*Theory of Light (adv). iv, 32.
Wave Motion. ii, 32.

HARVARD.

16 Graduate Students, 1897-8.

(Courses marked R are open to Radcliffe Graduate
Students.)

Jefferson Physical Lab. devoted to instruction and
research. Isolated tower for investigations
requiring great stability or height. Non-mag-
netic, constant temp. and photogr. rooms. Tyn-
dall Fel. of \$500.

JOHN TROWBRIDGE, Prof. of Physics, and
Dir. of the Physical Lab.

S.B., Harv., '65; Sc.D., same, '73.

*Electrodynamics, Magnetism, and Elec-
tromagnetism, ii, and lab., 30. (With
Asst. Prof. Sabine and Mr. Clapitts.)
Electrodynamics, with ref. to Periodic
Currents. Lab. ix, 30.

Electromagnetic Theory of Light. Re-
search. iv, 30.

Spectrum Analysis. Research. iv, 30.

EDWIN H. HALL, Prof. of Physics.

Ph.D., Johns Hopkins, '81.

*Elements of Thermodynamics. iii, 15,
O.-Ja.

*Mod. Devel. of Thermodynamics. iii,
15, F.-Jun.

R) Theory of Probability and Kinetic
Theory of Gases. —?

Electromagnetism. Research. —?

Heat Conduction. Research. —?

BENJAMIN O. PEIRCE (see 12).
R)[Math. Theory of Electricity and Magnetism. iii, 30.]

Electr. and Magn. Research. — ?
*Electrostatics, Electrokinematics, and parts of Electromagnetism. i, and lab. vi-viii, 30. (With Mr. ———.)
Math. Theory of Electricity and Magnetism. i, 30.

WALLACE C. SABINE, Asst. Prof. of Physics.

A.B., Ohio, '86; A.M., Harv., '88.

*Light and Heat. ii, and lab. vi-viii, 30.

Light and Heat. Research. — ?

JOHNS HOPKINS.

25 Graduate Students, 1897-8.

Physical Lab., with constant temp., non-magnetic and engine rooms, and those for optical work. Special facilities for work in light, heat, electricity and magnetism. Weekly meetings to discuss journals.

H. A. ROWLAND, Prof. of Physics, and Dir. of Phys. Lab.

C.E., Rensselaer Polytech. Inst., '70; Asst. Prof., same, '72-5; Ph.D. (hon.), Johns Hopkins, '80.

[Heat Conduction and Phys. Optics (lects). iv, 30.]

Electricity and Magnetism (lects). iv, 30.

J. S. AMES, Assoc. Prof. of Physics.

Ph.D., Johns Hopkins, '90.

Physical Seminary. i, 30.

Intro. to Math. Physics. ii, 15, O.-Ja.

Theory of Elasticity. ii, 15, F.-My.

Orig. work in Lab. (With Prof. Rowland.)

Gen. Physics. i, 30.

LOUIS DUNCAN, Assoc. Prof. of Electricity.

Ph.D., Johns Hopkins, '85.

Applied Electricity (el). iii, 30.

Applied Electricity. ii, 30.

Seminary. (With Prof. Rowland.) ii, 30.

H. S. HERING, Assoc. in Electr. Engineering.

M.E., Univ. of Penn., '86.

Electr. Measurements. ii, 30.

Central Station Equipment. v, 4. — ?

H. G. GIER, Assoc. in Mechan. Engineering.

M.E., Cornell, '93.

Mechanics of Engineering. ii, 30.

Steam and Hydraulic Engineering. iii, 30.

Mechanical Drawing. vi, 30.

LELAND STANFORD, JR.

2 Graduate Students, 1897-8.

FERNANDO SANFORD, Prof. of Physics.

B.S. Carthage, '79, and M.S., '82; Prof. Physical Science, Mt. Morris, '79-'82; Prof. Physical Science, Lake Forest, '90-1.

Orig. Probs. in Lab. — ?

MERRITT E. TAYLOR, Asst. Prof. of Physics.

B.S., Northwestern, '83, and M.S., '84; Asst. in Chemistry, '83-4; Instr. in Math., '84-6.

*Electrical and Magnetic Meas. iii, 32.

*Electro-Chemical Meas. iii, 32.

DANIEL W. MURPHY, Asst. Prof. of Physics.

A.B., Stanford, '92; A.M., '93, and Ph.D., '96.

*Theoretical Physics. ii, 32.

HERMAN LE CLERCQ STEARNS, Asst. Prof. of Physics.

*Thermodynamics. ii, 32.

MICHIGAN.

9 Graduate Students, 1897-8.

HENRY S. CARHART, Prof. of Physics and Dir. of Phys. Lab.

A.B., Wesleyan, '69, and A.M., '72; LL.D., same, '93.

*Dynamo Electric Machinery. iii, 17, F.-Jun.

Alternating Electric Currents. iii, 17, O.-F.

The Theory of Heat: Preston. ii, 17, O.-F.

Alternating Current Phenomena. ii, 17, F.-Jun.

JOHN O. REED, Asst. Prof. of Physics.

Ph.B., Mich., '85; Ph.M., '93, and Ph.D., Jena, '97.

*Acoustics, Violle. i-ii, 17, O.-F.

Michigan — continued

- *Theory of Light : Preston. ii, and lab. ii, F.-Jun.
- Adv. Lab. work in Light. ii, 34.
- *Geom. Optics. ii, 17, O.-F.
- Adv. Lab. work in Sound. ii, 17, O.-F.

KARL E. GUTHE, Instr. in Physics.
Ph.D., Marburg, '92.

- *Adv. Lab. work, in Electr. and Magnetism. iii, 17, F.-Jun.
- Theory of Potential and its Applications. iii, 17, F.-Jun.
- *Physical Chemistry. ii, 17, F.-Jun.
- *Electrical Measurements. i, and lab. iii, 17, O.-F.

————— Instr. in Physics.
Mathematical Electricity : Mascart and Joubert. iii, 17, O.-F.; ii, 17, F.-Jun.
Adv. Work in Photometry. i-ii, 17, F.-Jun.
Magnetism in Iron. ii, 17, F.-Jun.

MINNESOTA.

10 Graduate Students, 1897-8.

FREDERICK S. JONES, Prof. of Physics.
A.B., Yale, '84; A.M. Yale, '95; Berlin, Zurich.
*Theory of Light : Preston. iv, 36.
*Electrical Measurements. iv, 36.
Experimental Research. viii, 36.
[Theory of Heat : Preston. iv, 36.]

JOHN ZELENY, Asst. Prof. of Physics.
B.S., Univ. of Minn., '92; Berlin and Cambridge.
[Radiant Energy. viii, 36.]
*[Adv. Exper. Mechanics. viii, 36.]
*[Adv. Lab. Work, Gen. Physics. viii, 36.]

MISSOURI.

3 Graduate Students, 1897-8.

M. L. LIPSCOMB, Prof. of Physics.
A.B., Bethany College, '73; A.M., same, '83.
Laboratory. Adv. Measurements and Special Investigations. v, 36.
*Theory of Light. iii, 18.
*Mathematical Theory of Electricity and Magnetism. iii, 18.

NEW YORK.

5 Graduate Students, 1897-8.

D. W. HERING, Prof. of Physics.
C.E., Yale, '78; Fel. in Engineering. Johns Hopkins, '76-8; Ph.D., W. Md. Col., '95; Prof. Math. West Md. Col., '80-4; Prof. Physics West. Univ. of Pa., '84-5.
Magnetism and Electricity (minor course). ii, 30.
Mechanics (minor course). ii, 30.
Mechanics (major course). ii, 30.
General Physics (minor course). ii, 30.
T. W. EDMONDSON, Asst. Prof. of Physics.
A.B., Camb., '91, and Lond., '88; Fellow in Physics, Clark, '94-6; Ph.D., Clark, '96.
Dynamics. ii, 30.
Theory of Potential. i, 30.
Thermodynamics. ii, 14, F.-My.
Magnetism and Electricity (major course). ii, 30.
MORRIS LOEB, Prof. of Chemistry.
Ph.D., Berlin, '87; Docent, Clark, '89-'91.
Molecular Physics. ii, 30.

NORTHWESTERN.

3 Graduate Students, 1897-8.

1 Fel. \$400.

HENRY CREW, Prof. of Physics.
A.B. Princeton, '82; Ph.D., Johns Hopkins, '87.
*Math. Physics. iv, 36.
[Math. Theory of Electr. and Magn. ii, 36.]
Phys. Optics. ii, 36.
Lab. Research. Special Probs. —?

PENNSYLVANIA.

7 Graduate Students, 1897-8.

1 Fellowship of \$600 + Tul.; 2 Schols. (see 12 and 15).
GEO. F. BARKER, Prof. of Physics.
M.D., Alb. Med. Col., '63; Prof. Physiolog. Chem., Yale, '66-'73.
[Const. and Prop. of Matter. ii, 15, O.-F.]
[Wave Motion and Radiation. ii, 15, F.-My.]
Theory and Pract. of Spectroscopy. ii, 15, O.-F.
Electr. and Magnetism. ii, 15, F.-My.

Theory of Physical Measurements.
Lab. ii, 30.

Lab. in Abs. Physical Measurements.
ix, 30. (With Asst. Prof. Goodspeed.)

ARTHUR W. GOODSPEED, Asst. Prof. of Physics.

A.B., Harv., '84; Asst. in Phys., Univ. of Pa. '84-5; Instr., same, '85-9; Ph.D., same, '89.

Theoret. Dynamics. ii, 15, O.-F.

Thermodynamics. ii, 15, F.-My.

Theory of Potential. ii, 15, F.-My.

HORACE C. RICHARDS, Instr. in Physics.

A.B., Univ. of Pa., '88; Ph.D., same, '91.

Theory of Sound. ii, 15, O.-F.

PRINCETON.

9 Graduate Students, 1897-8.

Physical Lab. supplied with apparatus for adv. study and research. Magnetic obs. (no iron) for research in electr. and magnetism, open throughout the year to Grad. Students. A skilled mechanic is at the service of this dept. for construction of special apparatus.

C. F. BRACKETT, Prof. of Physics.

A.B., Bowdoin, '59, and A.M., '62; M.D., '63; LL.D., Lafayette, '83; Instr. Nat. Science, Bowdoin; Prof. Nat. Science, Prof. Chem., Prof. Geol. and Zool., Lecturer Med. Jurispr., Prof. Chem. and Physics, same.

Electricity and Magnetism. vi, 36.

Physics of the Ether. vi, 18, S.-Ja.

Hist. of Physics. vi, 18, F.-My.

W. F. MAGIE, Prof. of Physics.

A.B., Princeton, '79; Ph.D., Berlin, '85.

*Theory of Electricity. ii, 18, S.-Ja.

Math. Physics. ii, 36.

*Mechanics and Heat (el). Lab. viii, 18, S.-Ja.

Heat and Light, lects. on research methods. Lab. xii, 18, F.-My.

Special Investigations. Lab. i-iv, 36.

E. H. LOOMIS, Asst. Prof. of Physics.

A.B., Colgate; Ph.D., Strassburg.

*Analytical Mechanics. ii, 18, F.-My.

HOWARD MCCLENAHAN, Instr., in Physics.

E.E., Princeton, '95, and M.S., '97.

*Electr. and Magn. (el). Lab. viii, 18, F.-My.

Electr. and Magn., lects. on research methods. Lab. xii, 18, S.-Ja.

J. E. MOORE, Asst. in Electr. Eng.

M.E., Purdue, '92; E.E., Princeton, '92.

Absolute Measurements in Electr. and Magn. vi, 36.

Alternate Currents. vi, 36.

RADCLIFFE.

0 Graduate Students, 1897-8.

[See Harvard Courses marked R.]

VANDERBILT.

5 Graduate Students, 1897-8.

JOHN DANIEL, Prof. of Physics.

A.B., Ala., '84, and A.M., '86; Asst. Physics, same, '84-6; Univ. Scholar, Physics, Johns Hopkins, '87; Adj. Prof. Physics, Vanderbilt, '90.

Electr. and Magn. iii, 32.

Heat and Optics. iii, 32.

Exper. Electr. vi, 32.

WELLESLEY.

1 Graduate Student, 1897-8.

SARAH F. WHITING, Prof. of Physics and Physical Astronomy.

*Math. Physics. Selected subjects. iii, 35.

*Electricity. Theory and Measurements, iii, 35.

[More advanced work will be furnished to suit individual needs].

ELLEN HAYES, Prof. of Applied Math. (see 13).

*Theoretical Mechanics. iii, 17, S.-Ja.

*Thermodynamics. iii, 17, Ja.-Jun.

WESTERN RESERVE.

2 Graduate Students, 1897-8.

F. P. WHITMAN, Prof. of Physics and Astronomy.

A.B., Brown, '74, and A.M., '77; Prof. of Physics, Rensselaer Poly. Inst., '80-5; Prof. of Physics, Adelbert, '85.

*Physical Optics. iii, and lab. iii, 16, S.-Ja.

*Theory of Heat. iii, 17, F.-Jun.

Western Reserve — continued

Theory and Practice of Electr. Measurements. i, and lab. ii, 36.

WISCONSIN.

5 Graduate Students, 1897-8.

JOHN E. DAVIES, Prof. of Electricity and Magnetism, and Math. Physics.

A.B., Lawrence, '62, and A.M., '65; M.D., Ghi. Med. Col., '68; LL.D., Northwestern, '87.

Math. Theory of Sound and Wave Motion. iii, 36, S.-Jun.

Math. Theory of Electr. and Magnetism. iv, 36, S.-Jun.

Math. Physics, with lab. work. v, 36, S.-Jun.

Higher Geodesy and the Figure of the Earth. iii, 36, S.-Jun.

BENJAMIN W. SNOW, Prof. of Physics.

B.S. Cornell, '85; Ph.D., Berlin, '92.

Research work in laboratory. v, 36.

FRANKLIN H. KING, Prof. of Agricultural Physics.

Research work in Soil Physics.

YALE.

15 Graduate Students, 1897-8.

Sloane Phys. Lab., spec. devoted to invest. and research in Phys. Rooms for optical and photographic work, esp. in spectrum. Engine room, dynamos and apparatus for electric and magnetic work.

A. W. WRIGHT, Prof. of Exper. Physics
A.B., Yale, '59, and Ph.D., '61; Prof. Nat. Philos. and Chem., Williams.

Physics (el). ii, 32.

Physics (adv and research). — ?

C. S. HASTINGS, Prof. of Physics.

Ph.B., Yale, '70, and Ph.D., '73; Assoc. Prof. Physics, Johns Hopkins.

Physics (lects. and lab. work on special subjects). Lects. iii, lab. vi, 32.

J. W. GIBBS (see 12).

Electro-Magnetic Theory of Light. ii, 32.

[Thermodynamics and Properties of Matter. ii, 32].

[Electricity and Magnetism. i, 32].

W. G. MIXTER (see 15).

Chemical Physics. — ?

15. CHEMISTRY.

[For Mineralogy, see 17.]

BARNARD.

5 Graduate Students, 1897-8.

HERMANN T. VULTÉ.

Organic Chem. iii, 30.

Qual. Anal. v, 30.

BROWN.

2 Graduate Students, 1897-8.

JOHN H. APPLETON, Prof. of Chem.

B.P., Brown, '63, and A.M., '69; Instr. Chem., '63-8.

*Quant. Anal. vi-xi, 33.

*Organic Chem. vi-xii, 33.

*Assaying. vi-xii, 21, Ja.-Jun.

*Medical Chem. vi-xii, 21, Ja.-Jun.

*Agric. Chem. vi-xii, 21, Ja.-Jun.

*Scouring and Dyeing of Wool. vi-xii, 10, Ap.-Jun.

BRYN MAWR.

4 Graduate Students, 1897-8.

1 Fellowship \$525.

EDWARD H. KEISER, Prof. of Chem.

S.B. Swarthmore, '80; Asst. in Chem., '80-1, and S.M., '81; Fel., Johns Hopkins, '82-4, and Ph.D., '84; Asst. in Chem., '84-5.

Progress in Chem. in the 19th Century. ii, 30.

*Historical Development of Chemistry. ii, 30.

ELMER P. KOHLER, Assoc. in Physics.

A.B., Muhlenberg, '86, and A.M., '89; A.M., Johns Hopkins, '90; Fel., '91-2, and Ph.D., '92.

Organic Chemistry (adv). i, 30.

*Organic Chem. Selected Topics. i, 30.

EDGAR BUCKINGHAM (see 14.)
Thermodynamics. ii, 15, F.-Jun.

DRS. KEISER and KOHLER.
Seminary. i, 30.
Journal Club. i, 30.

CALIFORNIA.

6 Graduate Students, 1897-8.

WILLARD B. RISING, Prof. of Chem.
A.M., Hamilton; M.E., Michigan; Ph.D.,
Heidelberg.
Chemical Seminary. — ?
Special Research in Thermal Chem.
— ?
Heat Value of Fuel; Explosives; Se-
lected Topics in Inorg. Chem.; Adv.
Quant. Anal. — ?

EDMOND O'NEILL, Assoc. Prof. of Or-
ganic and Physiological Chem.
Ph.D., Univ. of Cal.
(Gives with Prof. Rising the preceding courses.)

CHICAGO.

84 Graduate Students, 1897-8; and 46 in Summer
Quarter, '97.

Kent Chem. Lab. equipped for scientific research.
5 Fels.

JOHN ULRIC NEFF, Prof. of Chem.
A.B., Harv., '84; Kirkland Fel., same, '84-7;
Ph. D., Munich, '86; Prof. of Chem., Purdue,
'87-9; Asst. Prof. of Chem., and Acting Head
of Lab., Clark, '89-'92.
Research for Ph.D. Thesis. Organic
Chem. xxx-xl, 36, Au.-My.
Special Organic Chem. Lects. iv, 6,
Au.-S.
Organic Chem. Lects. v, 30, O.-My.
Organic Preparations. x-xx, 30, O.-
My., and x-xx, 6, Au.-S.
Journal Meetings. i, 24, O.-Mar.

ALEXANDER SMITH, Assoc. Prof. of
Chemistry.

B.Sc., Edinburgh, '86; Ph.D., Munich, '89;
Asst. in Chem., Edinburgh, '89-'90; Prof. of
Chem. and Mineralogy, Wabash, '90-4.
Gen. Chem. (adv). Lects. iv, 12, Ap.-
Jun.
Research for Ph.D. Thesis. Gen.
Chem. xxx-xl, 36, O.-Jun.

Organic Preparations. x-xx, 6, My.-
Jun.

[History of Chem. ii, Ja.-Jun.]

FELIX LENGFELD, Asst. Prof. of Chem.
Ph.G., Univ. of Cal., '80; Fel., Johns Hopkins,
'87-8, and Ph.D., '88; Prof. of Chem., So.
Dakota School of Mines, '90-1; Instr. in Chem.,
Univ. of Cal., '91-2; Docent in Chem., Chi-
cago, '92-3; Tutor, '93-4; Instr., '94-5.

Inorganic Chem. (adv). Lects. ii,
12, O.-D.

Physico-Chem. Methods. v, 6, Ja.-F.
Inorganic Preparations. x-xx, 30, Jul.-
F., and x-xx, 12, Ap.-Jun.

Research for Ph.D. Thesis. Inorganic.
Chem. xxx-xl, 48, Jul.-Jun.

*Qualitative Anal. viii, 12, Ap.-Jun.

*Quantitative Anal. x, 24, Ap.-Jun.

Adv. Qual. Anal. viii, 12, Ap.-Jun.

Adv. Quant. Anal. x, 12, Ap.-Jun.

Theoret. Chem. iii, 18, O.-F.

JULIUS STIEGLITZ, Asst. Prof. of Chem.
Ph.D., Berlin, '89; Docent in Chem., Chicago,
'92-3; Asst., same, '93-4; Instr. '94-7.

Research for Ph.D. Thesis. Organic
Chem. xxx-xl, 30, O.-Mar., and
Jul.-Au.

Carbohydrates and Complex Hydro-
carbons. Lects. ii, 12, O.-D.

Organic Nitrogen Derivatives. Lects.
ii, 12, Ja.-Mar.

[Electrolytic Methods. x, 12, Jul.-Ja.]

*Qualitative Analysis. viii, 24, O.-Mar.,
and viii, 6, Jul.-Au.

*Quantitative Anal. x, 24, O.-Mar.,
and x, 6, Jul.-Au.

Adv. Quant. Anal. viii, 24, O.-Mar.,
and viii, 6, Jul.-Au.

Adv. Quant. Anal. x, 24, O.-Mar.,
and x, 6, Jul.-Au.

Special Methods in Quant. Anal. xx,
O.-Mar., and xx, 6, Jul.-Au.

[Aromatic Series. Lect. ii, 12, Ja.-
Mar.

MASSUO IKUTA, Instr. in Chem.

Univ. of Tokio, '80-4; Berlin, '85; Erlangen,
'86-8; Ph.D., Erlangen, '87; Asst. in Chem.,
Clark Univ., '91-2; Asst. in Chem., Chicago,
'92-5.

The Chemistry of Coal Tar Colors. i,
24, O.-Mar.

Chicago—continued

LAUDER WILLIAM JONES, Instr. in Chem.
A.B., Williams, '92; Grad. Stud., Chicago.
'94-5; Fellow, same, '95.
*Qualitative Anal. viii, 6, Au.-S.
*Quantitative Anal. x, 6, Au.-S.
Adv. Qual. Anal. viii, 6, Au.-S.
Adv. Quant. Anal. x, 6, Au.-S.
Element. Spectrum Anal. (qual). x,
12, Ja.-Mar.
Gen. Organ. Chem. Lect. v, 12, Jul.-
S.
Organic Preparations Lab. x-xx,
6, Jul.-Au.

COLUMBIA.

24 Graduate Students, 1897-8.

Chemical Museum has 8,000 Specimens. Col-
lection of Apparatus and Instruments.

PIERRE DEP. RICKETTS, Prof. of Anal.
Chem. and Assaying.

E.M., Columbia, '71, and Ph.D., '76; Asst. in
Chem., same, '68; Asst. in Mineral and Metal.,
'71-2; Asst. in Assaying, '72-5, and Instr.,
'75-'86; Prof. of Assaying, and later of Analyt-
ical Chem. and Assaying, since '86.

Investiga. of New Methods of Qual.
and Quant. Anal. x, 30. (With Dr.
Wells.)

Spectroscope Anal. viii, 30. (With
Dr. Wells.)

Quant. Anal. iv, and lab. xv, 1½ yrs.
(With Dr. Miller and Mr. Sherman.)

Special Volumetric Methods. Confs.
and lab. viii, 30.

Special Methods for Anal. of Plants
and their Products. Confs., and lab.
xii, 30. (With Drs. Miller, Sherman,
and Jouët.)

Assaying. Lab. ii, 30. (With Dr. Miller,
and Mr. Fulton.)

Special Methods of assaying ores,
alloys, and furnace products. (With
Dr. Miller.)

Ore Testing for the Proper Selection of
Methods of Treatment, Conf. and
lab. (With Mr. Fulton.)

CHARLES E. PELLEW, Dem. in Chem.
and Phys.

E.M., Columbia, '84; Instr. Physics and Chem.
same, '87-'91; Hon. Fel. in Applied Chem.

Industrial Chemistry. Special Course.
iv, 2 yrs. (With Prof. Chandler.)

Industrial Chemistry. Lab. iii, 14,
F.-J. (With Mr. Tucker.)

Industrial Chemistry. Lab. v, 14,
F.-J.

Industrial Chemistry (adv.)

*Physiological Chem. ii, and lab. vi,
16, O.-F. (With Mr. Tucker.)

Toxicology. ii, and lab. ii, 16, O.-
F.; also 14, F.-Jun. (With Mr.
Johnson.)

JAMES S. C. WELLS, Instr. in Qual. Anal.
Ph.D., Columbia, '77.

The Spectroscope as applied to Quali-
tative and Quan. Analysis. viii, 30.
(With Prof. Ricketts.)

Chem. Reactions. Confs., and Lab.
viii, 30. (With Mr. Bowen.)

CHAS. F. CHANDLER, Prof. of Chem.

Ph.D., Göttingen, '56; M.D., N. Y. Univ.;
LL.D., Union College; Prof. Chem. Union Col.,
'57-'64; Prof. Chem. Col. of Pharmacy, '64-8;
Prof. Chem., P. and S., '70-'97; Prof. Chem.,
Columbia, '97; Pres. Health Dept., New York
city, '73-'84.

Industrial Chem. Special Course. iv,
2 yrs. (With Prof. Pellew.)

EDMUND H. MILLER, Instr. in Anal.
Chem. and Assaying.

A.M., Columbia, '93; Ph.B., '92, Columbia;
Ph.D., Columbia, '94; Asst. in Assaying, same,
'91-4; Tutor in Assaying, '94-7.

Assaying and Quant. Anal. (With
Prof. Ricketts.)

CAVALIER H. JOUËT, Asst. in Anal.
Chem.

Ph.B., Columbia, '82; Ph.D., Columbia, '86.

Special Methods of Commercial Anal.
(With Prof. Ricketts.)

HENRY C. SHERMAN, Asst. in Anal.
Chem.

B.S., Agricultural College of Maryland, '93;
Ph.D., '97; Columbia; Asst. in Analytical
Chemistry, Ag. Col. of Md., '93-8; Asst. in
Analytical Chemistry, Columbia, '97.

Special and Advanced Methods of
Proximate Organic Analysis. 12
hrs. (With Prof. Ricketts.)

CHAS. H. FULTON, Asst. in Anal. Chem.
E.M., Columbia, '97.

Assaying. (With Prof. Ricketts.)
Ore Testing for Methods of Treatment.
(With Prof. Ricketts.)

J. LIVINGSTON R. MORGAN, Tutor in
Chem. Phil. and Chem. Physic.
Ph.D., Columbia, '94.
Physical Chemistry (adv).
xiv, 30.

SAMUEL A. TUCKER, Tutor in Industrial
Chemistry.
Ph.B., Columbia, '95.
Industrial Chemistry. (With Prof.
Pellew.)

MARSTON T. BOGERT, Instr. in Organic
Chem.
Ph.B., Columbia, '94; Fellow in Organ. Chem.,
same, '94; Asst. in Organ. Chem., '94-7; Instr.
same, '97.
General Organic Chemistry. iii, 30.
Adv. Organic Chemistry, (minor
courses.) xii, 30.
Adv. Organic Chemistry, (major
course.)

CORNELL.

18 Graduate Students, 1897-8.

Special building, 35 rooms; laboratories, museum,
lib. of 2,000 volumes, including complete sets of
all important chemical journals; 14 officers of
instr. Four Seminars. 1 Fel., \$500; 1 Grad.
Schol., \$300.

GEORGE C. CALDWELL, Prof. of Gen.
Chem. and Agricult. Chem.
B.S., Harv., '55; Ph.D., Göttingen, '57; Prof.
of Agricult. Chem., Cornell, '68-'75; Prof. of
Agricult. Chem. and Analyt. Chem., '75-'93.
Hist. of Chem. iii, 32.
Quant. Anal. (adv). iii, 32. (With
Prof. Dennis.)

LOUIS M. DENNIS, Prof. of Analyt. Chem.
Ph.B., Mich., '85; B.S. (in Chem.), Mich., '86;
Instr. in Chem., Cornell, '87-9; Asst. Prof. of
Analyt. Chem., '91-4.
*Quant. Anal. (adv). iii, 32. (With
Prof. Caldwell.)
*Inorganic Chem. (adv). Lects. iii, 32.
*Inorganic Chem. Seminary. i, 32.

JOSEPH E. TREVOR, Prof. of Gen. Chem.
and Phys. Chem.

Ph.D., Leipzig, '92.
*Math. Chem. iii, 32.
Hist. of Thermodynamics. iii, 32.
*Journal Club. i, 32. (With Prof. Ban-
croft.)

WILDER D. BANCROFT, Asst. Prof. of
Phys. Chem.
A.B., Harv., '88; Ph.D., Leipzig, '92; Asst.
in Phys. Chem., Harv., '93-4; Instr., '94-5.
Qual. Phys. Chem. ii, 32.
Quant. Phys. Chem. iii, 32.
*Electrochemistry. ii, 32.
*Journal Club. i, 32. (With Prof.
Trevor.)
*Phys. Chem. Lab. i-viii, 32.

D. A. MORTON, Instr. in Chem.

*Organic Chem. (adv). Laboratory
work.
*The Coal Tar Dyestuffs. Lects. i, 21.
*Stereochemistry. Lects. i, 11.
*Organic Chem. Seminary. i, 32.

HARVARD.

19 Graduate Students, 1897-8.

Seven large labs. in Boylston Hall, besides private
labs. and preparation rooms; also departmental
lib. and chem. museum. Instructors offer to di-
rect adv. students in any line of chem. investi-
gation.

CHARLES L. JACKSON, Prof. of Chem.
A.B., Harv., '67, and A.M., '70.
Organic Chem. Research. iv, 30.

HENRY B. HILL, Prof. of Chem. and
Dir. of Lab.
A.B., Harv., '69, and A.M., '72.
*Carbon Compounds. Ultimate Organic
Analyses. iii, 30. (With Mr. Wheel-
er.)
Organic Chem. Research. vi, 30.

THEODORE W. RICHARDS, Asst. Prof. of
Chem.
S.B., Haverford, '85; A.B., Harv., '86; Ph.D.,
same, '88.
*Quant. Anal. (adv). iii, 15, O.-Ja.
*Gas Anal. iii, 15, F.-Jun.
*Hist. of Chem. and Chem. Theory. ii,
15, F.-Jun.

Harvard — continued

Inorganic Chem. Atomic Weights.
Research. v, 30.
Physical Chem. ii, and lab. work, 30.
(With Dr. Gordon.)
Phys. Chem. Research. v, 30.

JOHNS HOPKINS.

48 Graduate Students, 1897-8.

Weekly Journal Meetings. 10 or 12 Lectures by
adv. students on spec. topics. Lab. daily, 9 to 5,
under Profs. Remsen and Morse.

IRA REMSEN, Prof. of Chem. and Dir. of
Chem. Lab.

A.B., Col. City of N. Y., '65; M.D., Col. Physi-
cians and Surgeons, N. Y., '67; Ph.D., Göttin-
gen, '70; Prof. Chem., Williams, '72-6; LL.D.,
Columbia, '93, and Princeton, '96.

Hist. of Chemistry. ii, 12, O.-D.
Compounds of Carbon. v, 18, Ja.-My.
Special Research. 9-5 daily, 30.

H. N. MORSE, Prof. of Analyt. Chem.

A.B., Amherst, '73; Ph.D., Göttingen, '75;
Instr. in Chem., Amherst, '75-6.

Analyt. Methods. i, 30.

W. W. RANDALL, Assoc. in Chem.

Ph.D., Johns Hopkins, '90.

Princ. of Phys. Chem. ii, 12, O.-D.

H. C. JONES, Instr. in Phys. Chem.

Ph.D., Johns Hopkins, '92.

Special Topics in Phys. Chem. ii, 30.

LELAND STANFORD, JR.

5 Graduate Students, 1897-8.

JOHN M. STILLMAN, Prof. of Chem.

Ph.B., Univ. of Cal., '74; Ph.D., same, '85;
Asst. in Chem., '73-5; Instr. in Organic and
Gen. Chem., California, '76-'82.

*Industrial Chem. ii, 32.

*Theories of Chem. ii, 17, Ja My.

*Adv. Lab. Work. —? (With Profs.
Richardson, Lenox, and Young.)

*Seminary. i, 32, S.-My.

GEORGE M. RICHARDSON, Prof. of Or-
ganic Chem.

A.C., Lehigh, '86; Ph.D., Johns Hopkins, '90;
Instr. in Quant. Chem. Anal., Lehigh, '88-9;
Fel. in Chem., Johns Hopkins, '89-'90; Instr.
in Organic Chem., Lehigh, '90-1.

*[Hist. of Chemistry. i, 17, Ja.-My.]

*Organic Synthesis. i, 17, Ja.-My.

LIONEL R. LENOX, Prof. of Analyt. Chem.

Ph.B., Columbia, '88; Instr. in Chem., Lehigh,
'88-'91.

*[Urine Analysis. ii, 15, S.-D.

*Toxicology. ii, 15, S.-D.

*[Urine Analysis (adv). —? S.-D.]

STEWART W. YOUNG, Asst. Prof. of Chem.

B.S., Cornell, '90; Asst. in Chem., '90-'1; Instr.
in Chem., Swathmore, '91-3.

*Adv. Organic Chemistry. ii, 17, Ja.-My.

*Thermo-Chemistry. ii, 15, S.-D.

*Electro-Chemistry. i, 32.

*Inorganic Preparations. —?

MICHIGAN.

13 Graduate Students, 1897-8.

1 Fel., \$350; 1 Fel., \$500; 1 Stipend for research,
\$345; 1 Stipend for bibliography, \$200. Jour-
nal Club, 2 hrs. a week.

A. B. PRESCOTT, Dir. of Chem. Lab. and
Prof. of Organic Chem.

M.D., Mich., '64; Prof. of Organic and Applied
Chem., Mich., '70-89.

*Carbon Compounds. Lects. v, 18,

O.-F.; also v, 16, F.-Jun.

*Analyt. Organic Chem. v, 34.

Research. Lab. v, 34.

Chosen Subjects. Lects. ii, 16, F.-Jun.

O. C. JOHNSON, Prof. of Applied Chem.

A.B., Oberlin, '68; Ph.C., Mich., '71; A.M.,
Oberlin, '77.

*Analyt. Chem., Adv. Qual. Lects.
ii, lab. v, 17, F.-Jun.

Inorg. Reactions. Lab. v, 34.

E. D. CAMPBELL, Junior Prof. of Metal-
lurgical Chem.

B.S., Mich., '86.

*Analyt. Chem., Adv. Quant. Lects.
ii, lab. v, 34.

Research in Analytical Chem. and Me-
tallic Carbides. Lab. v, 34.

M. GOMBERG, Instr. in Organic Chem.

Sc.D., Mich., '94; Munich and Heidelberg,
'96-7.

*Organic Preparations. Lab. v, 34.

Benzine Deriv. Lects. iv, 16, F.-Jun.

Pyridine Deriv. ii, 17, O.-F.
Organic Research. Lab. — ? 34.
P. F. TROWBRIDGE, Instr. in Organic Chem.
Ph.B., Mich., '92.
*Organic Preparations and Combustions. Lab. v, 34.
Research. Lab. v, 34.

A. H. WHITE.
A.B., Mich., '93; Instr. Univ. Ill., '93-5; Zurich, '96-7.
*Chem. Technology. v, 34, O.-Jun.

VICTOR C. VAUGHAN, Prof. of Hygiene and Physiol. Chem., and Dean of Dept. of Medicine and Surgery.
Ph.B., Mich., '75, Ph.D., '76, and M.D., '78.
Original Research on Causation of Disease. — ? 34.

FREDERICK G. NOVY, Junior Prof. of Hygiene and Physiol. Chem.
Sc.D., Mich., '90, and M.D., '91.
Physiol. Chem. (adv). — ? 34.

PAUL C. FREER, Prof. of Gen. Chem. and Dir. of Lab. of Gen. Chem.
M.D., Rush Med. Col., '82; Ph.D., Munich, '87; Asst. in Chem., Tufts, '87; Instr., same, '88; Lect. in Chem., Mich., '89; Prof., same, '89.
*Theoret. Chem. of Recent Years. ii, 17, O.-F.
Lab. Research. — ? 34.
*Hist. Chem. ii, 17, O.-F.

GEO. O. HIGLEY, Instr. in Chem.
B.S., Mich., '91, and M.S., '92.
*Methods of Determining Molecular Weights. Lab. ii, 17, F.-Jun.
*Lab. Research. — ? 34.

D. M. LICHTY, Instr. in Chem.
B.S., Westchester Normal School, '87; M.S., Mich., '91.

*Lab. Work. ii, 17, F.-Jun.
Lab. Research. — ? 34.

P. L. SHERMAN, Jr., Instr. in Chem.
Ph.D., Munich, '95.
Lab. Research in Organic Chem. — ? 34.
German Reading. ii, 17, O.-F.

J. LAWRENCE BIGELOW, Instr. in Chem.
A.B., Harv., '91; B.S., Mass., Inst. Tech., '95; Ph.D., Leipzig, '98.
Lab. Research in Physical Chem. — ? 34.
*Elementary Phys. Chem. iii, 34, O.-Jun.

MINNESOTA.

16 Graduate Students, 1897-8.

GEORGE B. FRANKFORTER, Prof. of Chem.
B.S., Univ. of Neb., '86; A.M., '88; Ph.D., Berlin, '93; Prof. of Analyt. Chem., Univ. of Neb., '93.
Electro-Chem. iv, 24.
Chem. of Comp. of Carbon. v, 36.
Plant Alkaloids. iv, 24.
Adv. Analyt. Chem. iv, 36.
Adv. Inorganic. iv, 36.

WILLIAM R. APPLEBY, Prof. of Metallurgy.
A.B., Williams, '86.
*Iron and Steel. iv, 12.
*The Precious Metals. iv, 12.
*The Base Metals. iv, 24.

MISSOURI.

2 Graduate Students, 1897-8.

W. G. BROWN, Prof. of Chem.
Miller Scholar, Univ. of Va., '75; B.S., Univ. of Va., '77; Morgan Fellow, Harv., '83; Ph.D. (hon.), Univ. of N. C., '90.
Chem. Philosophy. — ?
Quantitative Analysis. — ?
Organic Chem. — ?
Physical Chem. — ?

NEW YORK.

6 Graduate Students, 1897-8.

ROBERT W. HALL, Prof. of Anal. Chem.
A.M., Princeton, '76; E.M., Columbia, '76.
Analyt. Chem. (adv). Lab. ii, 30.
Inorganic Research. Lab. ii, 30.
Normal Course in Exper. and Gen. Chem., Chiefly for Teachers. Lects. and lab. practice.

New York — continued**MORRIS LOEB**, Prof. of Chem.

Ph.D., Berlin, '87; Docent, Clark, '89-'91.

Inorganic Synthesis. ii, 30.

Organic Chem. ii, 30.

Phys. Chem. ii, 30.

Seminar in Hist. and Theory of Chem. ii, 30.

Normal Course in Gen. Chem. ii, 30.

NORTHWESTERN.

3 Graduate Students, 1897-8.

1 Fellowship \$400.

ABRAM VAN EPS YOUNG, Prof. of Chem.

Ph.B., Mich., '75; Fellow, Johns Hopkins, '77-9; Asst. in Chem., Harv., '83-5.

*Gen., Descriptive, and Organic Chem., and Qual. and Quan. Anal. (el). iv, 36.

*Gen. Chem. (adv). ii, 36.

*Sanitary Chem. ii, 36.

Exper. Research. Inorganic. x-xv, 36.

PENNSYLVANIA.

22 Graduate Students, 1897-8.

Special building exclusively for Chem. 1 Fellowship \$500 + tuition; 1 Schol. in Chem. and Physics \$300 + tuition; (see also 16).

EDGAR F. SMITH, Prof. of Chem.

B.S., Pa. Col., '74; Ph.D., Göttingen, '76; Instr. in Univ. of Pa., '76-'81; Prof. of Chem., Muhlenberg Col., '81-3; Prof. of Chem., Wittenberg, '83-8.

Adv. Inorg. Chem. ii, 30.

Hist. of Chem. i, 30.

Electro-Chem. i, 30.

Min. Anal. i, 15, O.-F.

Seminar. i, 30.

HERMAN FLECK, Instr. in Chem.

Ph.D., Tübingen, '93.

Org. Chem. ii, 30.

Gas Anal. Sem. i, 15, F.-My.

WILLETT L. HARDIN, Senior Fel. in Chem.

B.S., Buchtel, '93; Instr. Phys., same, '93-4; Fel. in Chem., Univ. of Pa., '95-6; Ph.D., same, '96.

Phys. Chem. i, 30.

J. BIRD MOYER, Instr. in Chem.

B.S., Univ. of Pa., '92; Ph.D., '96.

Analyt. Chem. i, 30.

PRINCETON.

8 Graduate Students, 1897-8.

H. B. CORNWALL, Prof. of Applied Chem. and Mineralogy.

A.B., Columbia, '64, E.M., '67, and Ph.D., '88; Asst. in Chem. and Mineralogy, same.

*Quant. Chem. Anal. iv, 18, F.-My.

*Quant. Anal. (adv). vi, 36.

*Organic Chem. ii, 18, S.-Ja.

*Tech. Chem. i, 18, F.-My,

*Mineralogy. i, 36.

*Laboratory Chem. ii, 18, S.-Ja.

L. W. McCAY, Prof. of Chem.

A.B., Princeton, '78, and Sc.D., '83.

*Theoret. and Org. Chem. ii, 18, S.-Ja.

A. H. PHILLIPS, Instr. in Mineralogy.

B.S., Princeton, '87.

*Assaying. ii, 18, F.-My.

H. F. SILL, Instr. in Analyt. Chem.

B.S., Princeton, '94, and M.S., '96.

*Volumetric Analysis. i, 18, S.-Ja.

RADCLIFFE.

1 Graduate Student, 1897-8.

T. W. RICHARDS.

*Hist. of Chem and Chem. Phil. ii, 15, F.-Jun.

Phys. Chem. iii, 30.

Inorgan. Chem., incl. Determination of Atomic Weights. Research. —?

VANDERBILT.**WM. L. DUDLEY**, Prof. of Chem.

B.S., Univ. of Cin., '76-9; M.D., Miami Med. Col., '85; Prof. of Chem., Miami Med. Col., '80-6; State Chemist, '90-1; Dean Vand. Med., '96.

*Chem. Technology. iii, 32.

Adv. Quant. Analysis. Lects. iii, and lab. 32.

Metallurgy. Lects. ii, and lab. 32.

Adv. Analysis. Research. Lects. iii, and lab. 32.

- J. T. MCGILL, Adj. Prof. of Chem.
 B.S., Vanderbilt, '79; Ph.D., '81; Ph.G., '82.
 *Carbon Compounds. Lects. ii, and lab. 32.
 Theories and Principles Org. Chem. (adv). ii, 32.
 Organic Chem. (adv). Lects. iii, and lab. 32.
 Adv. Research and Invest. Org. Chem. Lects. iii, and lab. 32.
- W. H. HOLLINSHEAD, Instr. in Chem.
 Ph.G., Vanderbilt, '87.
 Adv. Analyt. Chem. Lab. vi, 32.

WELLESLEY.

o Graduate Students, 1897-8.

- CHARLOTTE F. ROBERTS, Prof. of Chem.
 A.B., Wellesley, '80; Ph.D., Yale, '94.
 *Qualitative Anal. iii, 35.
 *Organic Chem. with lab. work. iii, 35.
 *Theoret. Chem. iii, 17, S.-Ja.
 *Stereo-Chem. and lab. work in connection with Theoret. Chem. iii, 17, F.-Jun.
- CHARLOTTE A. BRAGG, Instr. in Chem.
 B.S., Mass. Inst. Tech., '90.
 *Qualitative Anal. iii, 17, S.-Ja.
 *Intro. to Organic Chem. iii, 17, F.-Jun.
- CHARLOTTE FAIRBANKS, Instr. in Chem.
 A.B., Smith, '94; Ph.D., Yale, '96.
 *Quant. Analysis. iii, 17, F.-Jun.
 *Adv. Quantitative Anal. iii, 17, S.-Ja.

WISCONSIN.

12 Graduate Students, 1897-8.

- WILLIAM W. DANIELS, Prof. of Chem.
 M.S., Mich., Agricult. Col., '67, Sc.D., '97;
 Prof. of Agricult., Wis., '68; Prof. of Analyt. Chem. and Agricult., '69-'80.
 Inorganic Chem. (adv). Lects. and lab. v, 36.
 Analytical Chem. (adv). Lects. and lab. v, 36.
- HOMER W. HILLYER, Asst. Prof. of Organic Chem.
 A.B. Wis., '82; Fellow, John Hopkins, '84-5, and Ph.D., '85.
 Organic Chem. (adv). v, 36.

LOUIS KAHLBERG, Instr. in Physical Chem.

- B.S., Wis., '92; Fel. in Chem., '92-3; M.S., Wis., '93; Instr. in Chem., '93-4; Ph.D., Leipzig, '95.
 Physical Chem. Lects. iii, and lab. 36.
 Electrochem. Lects. ii, and lab. 36.

EDWARD KREMERS, Prof. of Pharmaceutical Chem.

- Ph.G., Wis., '86, and B.S., '88; Ph.D., Göttingen, '90; Instr. Pharm. Chem., Wis., 90-2.
 [Polyatomic Alcohols of Paraffin Hydrocarbons and their Derivatives with spec. ref. to Sugars and Glucosides. i, 18, S.-F.]
 [Hydrocymenes and Derivatives, with spec. ref. to Volatile Oils. i, 18, F. Jun.]
 Nitrogen Derivatives of the carbon compounds preparatory to the study of Alkaloids and Ptomaines. Lects. and reading. i, 36, S.-Jun.
 Orig. work and research, esp. of Terpenes and Volatile Oils.

C. F. BURGESS, Instr. in Electrical Engineering.

- B.S., Wis. '95.
 Electrochem. and Electrometallurgy. iii, 18, S.-F.
 Advanced Lab. work.

YALE.

28 Graduate Students, 1897-8.

Chemical Club hold fortnightly meetings.

W. G. MIXTER, Prof. of Chem.

- Ph.B., Yale, '67, and A.M., '87.
 Chemical Physics. —?
- H. L. WELLS, Prof. of Analyt. Chem. and Metallurgy.
 Ph.B., Yale, '77; Chemist, Conn. Agricult. Exper. Station.
 Qual. Anal. (el). ii, and lab. xxxv, O.—D.
 Quant. Anal. Lects. and lab. —? 32.
 Quant. Anal. (adv). xxxv, 32.
 *Metallurgy and Assaying. Lects. and lab. —? Easter-Jun.
 *Tech. Gas Anal. —? Easter-Jun.
 Investigat. in Inorg. Chem. —? 32.

Yale—continued

W. J. COMSTOCK, Instr. in Organic Chem.

Ph.B., Yale, '79.

Organic Chem. (el). Rec., lect. and lab. —? 32.

Organic Chem. (adv). ii, O.—D.

JAMES LOCKE, Instr. in Chem.

A.B., Yale, '90; Ph.D., Heidelberg, '95.

*Inorg. Chem. (adv). iii, O.—D.

Theory of Anal. Chem. ii, Ja.—Mar.

Constit. of Chem. Compounds. iii, Mar.—Jun.

H. L. WHEELER, Instr. in Chem.

Ph.B., Yale, '90, and Ph.D., '93.

Organic Chem. (adv). —? 32.

Organic Preparations. —? Ja.—Ap.

B. B. BOLTWOOD, Instr. in Anal. Chem.

Ph.B., Yale, '92; Ph.D., '97.

Physical Chem. Lects. Ja.—Ap.

Physico-Chem. Meas. Lects. and lab. —? Ja.—Jun.

Electro-Chem. Lects. and lab. —? Ja.—Jun.

F. P. GOOCH, Prof. of Chem.

A.B., Harv., '73; Asst., same, '73-75; Ph.D., same, '77; Expert Spec. Agt., U. S. 10th Census; Chem. Northern Transcont. Survey, '81-4; U. S. Geol. Survey, '84-6.

*Organic Chem. (el). iv, 32.

*Quant. Anal. vi, 32.

Quant. Anal. (2d course). Lab. v, 32.

Organic Synthesis. Lab. —?

[Chemical Theory. i, 32.]

Special Methods. Lab. —?

Research in Inorganic Chem. —?

*Exper. Inorg. Chem. vi, 32. (With Dr. Browning.)

P. E. BROWNING, Instr. in Chem.

A.B., Yale, '89, and Ph.D., '92.

*Qual. Anal. v, 32.

Inorg. Preparations. Lab. —?

Rare Elements. i, 32.

16. BIOLOGY.

[Including Zoölogy, Botany, Physiology, and Palæontology (in part). See also 17.]

BARNARD.

4 Graduate Students, 1897-8.

[All Columbia Graduate Courses in Zoöl. (except Dr. Strong's, the Biological Seminar and Adv. Biology) and all Graduate Courses in Botany open to Barnard Graduate Students.

HERBERT MAULE RICHARDS, Instr. in Botany.

S.B., '91; S.D., Harvard, '95; Parker Fellow, same, '95-6; Instr., same, '97-8; Tutor Columbia and Barnard, '96-7.

Cryptogamic Botany (adv). iii, 30.

Physiol. and Morphol. Botany (adv). vi, 30.

Research. (With Dr. Townsend.)

CHARLES ORRIN TOWNSEND, Instr. in Botany.

B.S., '88; M.S., Michigan, '91; Ph.D., Leipzig, '97; Prof. Nat. Sci., St. John's College, '88-'91; Prof. Nat. Sci., Wesleyan College (Georgia), '91-5; Tutor. Columbia, '95—.

Research. (With Dr. Richards.)

BROWN.

6 Graduate Students, 1897-8.

Investigator's rooms, Marine Biol. Lab. and U. S. Fish Com., Wood's Holl, by permission. Clinical opportunities at R. I. Hospital.

HERMON C. BUMPUS, Prof. of Com. Anat.

B.P., Brown, '84; Ph.D., Clark, '90; Instr. Biol., Brown, '84-5; Prof. Biol., Olivet, '85-8; Fel. in Morphol., Clark, '88-9; Assoc. Prof. Biol., Brown, '89-'90; Asst. Dir. Marine Biol. Lab., Wood's Holl, '94-5; Sec. of same, '97; Sec. Am. Soc. Naturalists, '94; Dir. Biol. Lab. of U. S. F. C., Wood's Holl, '98.

*Invert. Anatomy. iii, 23.

*Comp. Anat. Vertebrates. iii, 23, S.—Mar.

Biological Theories and Probs. Seminar. ii, 33.

ALBERT D. MEAD, Assoc. Prof. of Embryology and Neurology.

A.B., Middlebury, Col., '90; A.M., Brown, '91; Fellow in Biology, Clark, '92; Fellow, Univ. Chicago, '93-5; Ph.D., Chicago, '95.

*Anatomy of Nervous System. iii, 23,
S.-Mar.

*Embryology. iii, 10, Ap.-Jun.
Cytology. iii, 33.
Seminar. ii, 33.

FREDERIC P. GORHAM, Instr. in Biol.
A.B., Brown, '93, and A.M., '94.

*Bacteriology. vi, 11, Ja.-Mar.
Seminar. ii, 33.

RALPH W. TOWER, Instr. in Physiol.
Chem.

A.B., Brown, '92, and A.M., '93; Instr. Biol.,
'92-3; Fellow, '94-5.

*Chem. Physiology. iii, 33.
Scientific German. Seminar. ii, 33.

JAY PERKINS, Dem. in Hum. Anat.

M.D., Harvard, '91; Pathologist to R. I. and
Prov. Lying in Hospitals, Med. Ex. Dist., 10.

*Laboratory Work. ii, 21, Ja.-Jun.

BRYN MAWR.

6 Graduate Students, 1897-8.

1 Fellowship, \$525.

THOMAS H. MORGAN, Prof. of Biol.

B.S., State Col. Kentucky, '86, and M.S., '88;
Fel., Johns Hopkins, '89-'90; Ph.D., '90, and
Bruce Fel., '90-1.

The structure of Protoplasm and of the
Cell. i, 30.

[Critique of Darwin's Theory of Nat-
ural Selection. i, 30.]

*Embryology. i, 30.

*[General Zoology. i, 30.]

JOSEPH W. WARREN, Assoc. Prof. of
Physiology.

A.B., Harv., '71; M.D., Univ. of Bonn, '70;
Asst. and Instr. in Physiol., Harv. Med. Sch.,
'80-'91; Lect. in Med. Dept., Univ. City of
N. Y., '85-6; Lect. in Physiol., Mich., '89.

Physiol. of Special Senses. i, 30.

[Respiration and Secretion. i, 30.]

*[Struct. and Funct. of the Central Ner-
vous System. i, 30.]

*Physiology (adv). i, 30.

DRS. MORGAN and WARREN.

Seminary. Fortnightly.

Journal Meeting. Fortnightly.

CALIFORNIA.

16 Graduate Students, 1897-8.

JOSEPH LE CONTE (see 17).

Physiological Optics. ii, 16, Ja.-My.
Gen. Laws of Animal Structure. —?

WILLIAM E. RITTER, Asst. Prof. of Biol-
ogy.

A.M. and Ph.D., Harvard.

Asexual Reproduction in Animals. ii,
16, Ja.-My.

Special Research —?

Zoological Seminary. i.

HERBERT P. JOHNSON, Asst. Prof. of
Biology.

Ph.D., Chicago.

*Systematic and Field Zool. iii.

*Comparative Embryology. v.

Zoological Seminary. —?

CHICAGO.

Hull Biological Laboratories equipped for research.
13 Fels.

37 Graduate Students in Zoology, 1897-8; and 24
in Sum. Quar., '97; 5 Fels.

6 Graduate Students in Neurology, 1897-8; and 4
in Sum. Quar., '97; 1 Fel.

4 Graduate Students in Anatomy, 1897-8; and 17
in Sum. Quar., '97.

26 Graduate Students in Botany, 1897-8; and 41 in
Sum. Quar., '97; 2 Fels.

16 Graduate Students in Physiology, 1897-8; and
20 in Sum. Quar., '97.

CHARLES O. WHITMAN, Head Prof. of
Zoology.

A.B., Bowdoin, '68, and A.M., '71; Ph.D.,
Leipzig, '78; LL.D., Nebraska, '94; Fel.
Johns Hopkins, '79; Prof. Zoology, Imp. Univ.
of Japan, '80-4; Asst. in Zool., Harv., '83-5;
Prof. Zool., Clark, '89-'92; Dir. Marine Biol.
Lab.

Marine Zool. (at Wood's Holl). viii,
12, Jul.-S.

Seminar. Hist. Topics. i, 24, O.-Mar.

Embryol. Higher Invert. Research.
viii, 24, O.-Mar.

Embryol. Tectonics of Vert. Embryo.
viii, 12, Ap.-Jun.

Chicago—continued

WM. M. WHEELER, Asst. Prof. in Embryology.

Curator, Milwaukee Pub. Museum, '87-'90; Asst. in Morphology, Clark, '90-2, and Ph.D., '92.

*[Entomology. iv-viii, 36 or 18, O.-Jun.]

*Embryology of Vertebrates Lect. (adv). viii, 12, Ap.-Jun., and viii, 6, Jul.-Au.

*Comp. Anat. of Vertebrates. viii, 12, O.-D.

*Com. Anat. of Vertebrates (cont). viii, 12, Ja.-Mar.

Comp. Anat. and Embryol. Research. iv-viii, 36, O.-Jun., and iv-viii, 6, Jul.-Au.

EDWIN O. JORDAN, Asst. Prof. of Bacteriology.

S.B., Mass. Inst. Tech., '88; Chief Asst. Biol., Mass. State Bd. of Health, '88-'90; Lect. on Biol., Mass. Inst. Tech., '89-'90; Fel., Clark, '90-2, and Ph.D., '92.

*[Special Bacteriology. iv-viii, 12 or 6; O.-D.; also Ja.-Mar., and Jul.-S.]

*Gen. Bacteriology. iv, 12, O.-D.

*Pathogenic Bacteria. iv, 12, Ja.-Mar.

*Public Hygiene. iv, 12, Ap.-Jun.

*Pathol. Bacteria. viii, 6, Au.-S.

Seminar. Immunity. ii, 6, Au.-S.

Bacteriology. Research. iv-viii, 36, O.-Jun.

SHO WATASÉ, Asst. Prof. in Cellular Biology.

B.S., College of Sapporo, Japan, '84; Ph.D., Johns Hopkins, '90; Asst. and Lect., Clark, '90-2.

Anat. and Physiol. of the Cell. iv-viii, 24, O.-Mar.

Cytology. Research. iv-viii, 36, O.-Jun.

Comp. Histology. iv-viii, 12, Ap.-Jun.

CHARLES MANNING CHILD, Assoc. in Zoölogy.

Ph.B., Wesleyan, '90; S.M., same, '92; Ph.D., Leipzig, '94; Fellow, Chicago, '94-5; Asst., '95-7.

*Field Zoöl. xv, 12, Ap.-Jun.

*Field Zoöl. xv, 6, Au.-S.

HOWELL E. DAVIES, Fellow in Zoöl.

A.B. and Pharm. Chem. Univ., Kansas, '97.

*Elem. Bacteriol. Technique. viii, 6, Jul.-Au.

HENRY H. DONALDSON, Head Prof. of Neurology.

A.B., Yale, '79; Fel., Johns Hopkins, '81-3; Instr. in Biol., same, '83-4; Ph.D., '85; Assoc. in Psychol., '87-8; Asst. Prof. Neurology, Clark, '86-'92.

*Research. Study of Neurol. Probs. iv, 36, O.-Jun.

*Nervous System. Architecture. iv, 12, O.-D. Brain Growth. Ja.-Mar.

Histol. of Cent. Nervous System and Sense Organs. Ap.-Jun.

Seminar. ii, 36, O.-Jun.

GEORGE BAUR, Assoc. Prof. of Palæontology.

Ph.D., Munich, '82; Asst., Munich, '82-4; Asst. Yale, '84-'90; Docent, Clark, '90-2.

Palæontol. of Verts. Lects. iv, 24, Ja.-Jun.

[Gen. Morphol. of Vert. Skeleton. viii, 12, Jul.-S.]

[Syst. Phylogeny of Verbtts. v, 12, O.-D.]

[Seminar in Phylogeny. ii, 36, O.-Jun.]

Research in Vert. Palæontol. xv, 36, O.-Jun.

*Outlines of Vert. Zoöl. and Palæont. iv, 12, O.-D.

*Devel. of Vert. from Geol. Point of view. iv, 12, Ja.-Mar.

Lab. Work in Vert. Palæont. iv-viii, 24, Ja.-Jun.

ALBERT C. EYCLESHYMER, Instr. in Anat.

S.B., Mich., '91; Fel., Princeton, '91; Fel., Clark, '91-2; Fel., Chicago, '93-3; Asst., same, '93-5; Ph.D., same, '94; Assoc., same, '95-7.

Anatom. and Histol. Methods. iv, 12, O.-D.

Elements of Histol. iv, 12, Ja.-Mar.

Mammalian Anat. iv-viii, 24, Ja.-Jun.

Histol. Changes in Normal Tissues. iv, 12, Ap.-Jun.

Elem. Histol. Technique. iv, 24, O.-Mar.

IRVING HARDESTY, Fellow in Neurology.

A.B., Wake Forest Col., '92; Grad. Stud., Chicago, '93-5; Instr. in Histol. and Comp. Anat., Univ. of Mo., '95-6; Fel., Chicago, '96-7.

*Histol. of Cent. Nervous System and Sense Organs. iv, 12, Jul.-S.

*Growth of Brain. iv, 12, Jul.-S.

JOHN M. COULTER, Head Prof. of Botany.

A.B., Hanover, '70, and A.M., '73; Prof. Nat. Science, same, '74-9; Ph.D., Hanover and Indiana, '82; Prof. Biol., Wabash, '79-91; Pres. and Prof. Bot., Indiana, '91-3; Pres., Lake Forest, '93-6.

Research in Taxonomy. iv-viii, 48, Jul.-Jun.

[Ecology, with ref. to local plant societies. xii, 24, Ap.-S.

Elem. Morphol. iv, 36, Ap.-D.

Ecology. iv, 24, Ap.-S.

Gen. Morphol. Algæ and Fungi. iv, 12, O.-D. Bryoph. and Pteridophytes. v, 12, Ja.-Mar. Spermatophytes. iv, 12, Ap.-Jun.

Spec. Morphol. Bryophytes. iv, 12, Ja.-Mar. Pteridophytes. iv, 12, Ap.-Jun. Gymnosperms. iv, 12, O.-D.

Adv. Work in Morphol. iv-viii, 48, Jul.-Jun.

Research Work in Morphol. iv-viii, 48, Jul.-Jun.

CHARLES REID BARNES, Prof. of Plant Physiol.

Elem. Physiol. iv, 12, Ja.-Mar.

Plant Physics. iv, 12, O.-D.

Plant Chemicals. iv, 12, Ja.-Mar.

Growth and Movement. iv, 12, Ap.-Jun.

Research in Physiology. iv-viii, 36, O.-Jun.

Research in Taxonomy. iv-viii, 48, Jul.-Jun.

BRADLEY MOORE DAVIS, Assoc. in Bot.

A.B., Stanford, '92; Grad. Stud., Harvard, '92-5; Ph.D., Harvard, '95; Asst. in Bot., Chicago, '95-6.

Organic Evolution. iv, 24, Ja.-Jun.

Special Morphol. of Algæ. iv, 12, O.-D.

Special Morphol. of Fungi. iv, 12, Ap.-Jun.

Research in Taxonomy. iv-viii, 48, Jul.-Jun.

CHARLES JOSEPH CHAMBERLAIN, Asst. in Morphol. and Cytol.

Elem. Histology. iv, 24, Ap.-S.

Special Morphol. of Bryophytes. iv, 12, Ja.-Mar. [Pteridophytes. iv, 12, Ap.-Jun.] Gymnosperms. iv, 12, O.-D. Monocotyledons. iv, 22, Ja.-Mar. Dicotyledons. iv, 12, Ap.-Jun.

Cytology. iv, 12, Ja.-Mar.

Adv. Work in Morphol. iv-viii, 48, Jul.-Jun.

Research Work in Morphol. iv-viii, 48, Jul.-Jun.

HENRY CHANDLER COWLES, Lab. Asst. in Ecology.

A.B., Oberlin, '93; Prof. Nat. Sciences, Gates Col., '94-5; Fellow, Chicago, '95-7; Ph.D., Chicago, '98.

Ecology. iv, 24, Ap.-S.

Ecological Anatomy. iv, 6, Jul.-Au., and iv, 12, O.-D.

Field Botany. iv-viii, 6, Au.-S.

WILLIAM DAYTON MERRELL, Lab. Asst. in Morphol.

A.B., Rochester, '91; Prof. Nat. Sciences, Wayland Acad., '91-4, and Western Mil. Acad., '94-5; Grad. Stud., Chicago, '95-6; Fellow, '96-7.

Gen. Morphol. of Algæ and Fungi. iv, 12, O.-D. Bryophytes and Pteridophytes. iv, 12, Jul.-S., and Ja.-Mar.

Spermatophytes. iv, 12, Ap.-Jun.

OTIS WILLIAM CALDWELL, Lab. Asst. in Morphol.

S.B., Franklin, '94; Grad. Stud., Chicago, '95-6; Fellow, '96-7.

Elem. Morphol. iv, 36, Ap.-D.

JACQUES LOEB, Assoc. Prof. of Physiol.

M.D., Strassburg, '84; Asst. in Physiol., Würzburg, '86-8; Asst. in Physiol., Strassburg, '81-90; Assoc. in Biology, Bryn Mawr, '91-2.

Gen. Physiol. of Animals and Plants, Nerves and Muscles. iv, 12, Jul.-S.

Lab. work in Gen. Physiol. ix, 6, Jul.-Au.

Physiol. of Respiration, Circulation, Heat. iv, 12, Ja.-Mar. Lab. ix, 6, F.-Mar.

Chicago — continued

Physiol. of Cent. Nerv. Syst. and Sense Organs. iv, 12, Ap.-Jun. Lab. ix, 6, My.-Jun.

Seminar. i, 36, Jul.-S., Ja.-Jun.

Research. xxx, 36, Jul.-S., Ja.-Jun.

DAVID J. LINGLE, Instr. in Physiol.

B.S., Chicago, '85; Asst. in Science, Beloit, '84-7; Asst. Prof. Biol., Tulane, '89-'90; Fel., Johns Hopkins, '91-2, and Ph.D., '92.

Adv. Physiol. ix, 36, O.-Jun.

Physiol. of Digestion and Secretion. iv, 12, O.-Ja.

CLARK.

24 Graduate Students, 1897-8.

Two Fels. \$600 each, two \$400 each; two schols. \$200 each, two \$100 each. Lab. open daily from 8 to 6. Special attention to individual work.

CLIFTON F. HODGE, Asst. Prof. of Physiology and Neurology.

A.B., Ripon College, '82; Fel., Johns Hopkins, '88-9; and Ph.D., '89; Fel. in Physiology and Asst. in Neurology, Clark, '89-'91; Instr. in Biology, Wis., '91-2.

General Biology (adv). Lab. i, 17, O.-Ja.

Comp. Study Nervous Systems and Sense Organs. i, 6, Ja.-F.

Seminary. i, O.-Jun.

Muscle-Nerve Physiol. Lab. i, 17, O.-Ja.

Embryology and Growth of Human Brain and Sense Organs. i, 6, My.-Jun.

Practical Histology of Nervous System, Esp. Peripheral and Relational. Lab. daily, O.-Jun.

COLUMBIA.

21 Graduate Students, 1897-8.

Investigators' rooms, Marine Biol. Lab., Wood's Holl. Annual Biological expedition to Puget Sound. Herbarium of about 500,000 spec., Torrey coll. Bot. Lib., 3,700 vols., 5,000 pams. Museum of human and comparative anatomy. Access by agreement to Am. Museum of Nat. Hist. Bacteriological and Physiological Labs.

HENRY F. OSBORN, Prof. of Zoölogy.

A.B., Princeton, '77, and Sc.D., '81; Curator Invert. Palaeontol., Am. Museum of Nat. Hist.

Comp. Zoölogy. vi, 30. (With Prof. Wilson.)

Morphol. of Mammals. vi, 30.

Biology (adv). xii, 30.

Seminar. i, 30.

Vertebrate Organogeny. Lects. and lab. v, 14, F.-Jun. (With Dr. Dean.)

EDMUND B. WILSON, Prof. of Invertebrate Zoölogy.

Asst. in Zoölogy, Yale, '78-9; Asst. in Biol., Johns Hopkins, '81-2, and Ph.D., '82; Lect. in Biol., Williams, '83-4; Lect., Mass. Inst. Tech. '84-5; and Prof. Biol., Bryn Mawr, '85-'91.

Comp. Embryology. vi, 30.

Cellular Biology. v, 14, F.-Jun.

Comp. Zoölogy. v, 30. (With Prof. Wilson.)

BASHFORD DEAN, Adj. Prof. of Zoölogy. Ph.D., Columbia, '90.

Morphology of Fishes. vi, 14, F.-Jun.

Embryology of Fishes. i, 14, F.-Jun.

Vertebrate Organogeny. (With Prof. Osborn.)

GARY N. CALKINS, Tutor in Zoölogy. Special Morphology. i, 14, F.-Jun.

HENRY E. CRAMPTON, Jr., Lect. in Zoölogy.

A.B., Columbia, '93; Asst. in Zoölogy, '93-5; Instr. in Zoölogy, Mass. Inst. of Tech., '95-6.

Exper. Embryology. i, 16, O.-F.

JOHN G. CURTIS, Prof. of Physiology.

A.B., Harvard, '66, and A.M., '69; Asst. Demonstrator, Columbia, '70-1; Dem. in Anat., '71-5; Adj. Lect. on Psychol. and Hygiene, '75-6; Adj. Prof., '76-'83; Prof. '83-.

*Comp. Physiology. iv-vi, 30. (With Prof. Lee and Drs. Cunningham and Hunt.)

Lab. Research. —? (With Prof. Lee and Dr. Cunningham.)

FREDERICK S. LEE, Adj. Prof. and Demonstrator of Physiology.

General Physiology. i, 30.

Lab. courses. v, 30. (With Dr. Hunt.)

GEORGE S. HUNTINGTON, Prof. of Anatomy.

A.B., Yale; M.D., Columbia, '84; Asst. Dem. in Anat., same, '86-9; Lect., '89-'90, and Prof. of Anatomy, '90.

- Lab. courses in Animal Morphol., Carpus, Respiratory Apparatus, Nervous system, Myology, Auditory Apparatus, Urino Genital System, Cranial Topography. —?
Comp. Vertebrate Morphology. Lects. —?
- T. MITCHELL PRUDDEN, Prof. of Pathology.
Bacteriology (adv). —? (With Dr. Cheesman.)
- TIMOTHY M. CHEESMAN, Instr. in Bacteriology.
A.B., Columbia, '74, A.M., '77, and M.D., '78; Instr., '93.
Preparation, Staining, Measurements, etc., of Bacteria. —?
- O. S. STRONG, Tutor in Comp. Neurology.
A. B., Princeton, '86; Ph.D., Columbia, '92; Tutor, Columbia, '93.
Comp. Neurology. iii, 30.
- LUCIEN M. UNDERWOOD, Prof. of Bot.
A.B., Syracuse, and Ph.D.; Prof. Geol. and Bot., Ill. Wesleyan Univ., Syracuse, De Pauw, and Ala. Polytech. Inst.; Dir. Biol. Survey Ind., '93-5.
Cryptogamic Bot. Lects. i, lab. iv, 30. (With Dr. Curtis.)
Natural Families of Flowering Plants. Lects. i, lab. iv, 30.
Cryptogamic Botany (adv.) Lects. i, lab. iv, 30. (With Dr. Curtis.)
Comp. Study of Plant Tissues. Lab. viii, 30. (With Dr. Curtis.)
Crit. Study of a family or Genus of not less than 50 species. viii, 2 yrs.
Special Morphology of Fungi. x, 30.
Research Work in Morphology. x, 3, yrs.
Comp. Study of the Plants of Some Restricted Area. viii, 2 yrs., summers.
- CARLETON C. CURTIS, Tutor in Botany.
A.M., Columbia, '92; Ph.D., Syracuse, '93.
Research in Plant Physiology. x, 3 yrs.
Comp. Embryology. x, 3 yrs.
- JOHN K. SMALL, Curator of the Herbarium.
Ph.D., Columbia, '95; Curator, '95-8.
The Natural Families of Flowering Plants, 30.
- CORNELL.**
20 Graduate Students, 1897-8.
Herbar. contains 15,000 spec. Insectary of Agricultural Exper. Station affords facilities for investigating life hist. of insects. Special feature of Zoöl. Museum is extensive series of human and animal brains. 1 Fel., \$500, and 1 Grad. Schol. assigned to Depts. of Physiol., Vertebrate Zoölogy, and Entomol., Gen. Invert. Zoöl. Also 1 Fel., \$500, and 1 Grad. Schol., \$300., assigned to Depts. of Botany and Geol.
- BURT G. WILDER, Prof. of Physiol., Vert. Zoöl., and Neurology.
B.S., Harv., '62; M.D., same, '66; Asst. in Anat., same, '66-8; Prof., Cornell, '68.
*Neurology. iii, 9, Ap.-Jun.
*Adv. Neurology. vi, 32. (With Dr. Stroud.)
*Comp. Anat. iii, 11, Jan.-Mar.
Vertebrate Zoöl. iii, and lab. ii, 11, Ja.-Mar.
Physiol. Anat. iii, 12, O.-D.
Syst. and Econ. Zoöl. iii, 32.
Research and Thesis Work. vi, 32. (With Dr. Stroud.)
Seminary. i, 32.
- JOHN H. COMSTOCK, Prof. of Entomol. and Gen. Invert. Zoöl.
B.S., '74; Instr. in Entomol., same, '73-7; Asst. Prof., '77-'82; U. S. Entomol., '70-'81; also Prof. of Entomol., Leland Stanford.
*Insect Anat., Life Hist., and Classifica. Lab., xxv, 21, O.-D., also Ap.-Jul.
*Entomol. Lects. iii, 9, Ap.-Jun.
*Entomol. 3 lects., field and lab. 10, Jun.-S.
Invert. Zoöl. Lab. ii, 21, O.-D., also Ap.-Jun. (With Mr. MacGilliray.)
- SIMON H. GAGE, Prof. of Microscopy, Histol., and Embryol.
B.S., Cornell, '77; Instr. in Microscopy and Pract. Physiol., same, '78-'81.
- GEORGE F. ATKINSON, Prof. of Botany.
Ph.B., Cornell, '85; Prof. of Entomol., Univ. of N. Car., '85-8; Prof. of Botany and Zoölogy, Univ. of S. Car., '88-9; Alabama Pol. Instr., '89-'92; Asst. Prof. of Crypt. Bot., Cornell, '92-3; Assoc. Prof. of Botany, '93-6.

Cornell — continued

- *Comp. Morphology and Embryology of Plants. iii, 32.
- *Mycology. iii, 32.
- *Algology. iii, 32.
- *Research in Embryology, Mycology, Ecology, etc. ii, 32.
- *Seminary. i, 32.
- LIBERTY H. BAILEY**, Prof. of Gen. and Exper. Hort.
B.S. and M.S., Mich. Agricult. Col.
- *Organic Evolution. iii, 12, O.-D.
- *Botany of Cultivated Plants i, 11, Ja.-Mar.
- WILLARD W. ROWLEE**, Asst. Prof. of Botany.
B.L., Cornell, '88; Sc.D., same, '93; Asst. in Bot., Agricult. Exper. Station. Instr. in Bot.
- *Special Morphology of Higher Plants. iii, 32.
- *Systematic Botany. iii, 32.
- *Comp. Histology. iii, 32. (With Mr. Wiegand.)
- *Special Investiga. iii, 32. (With Mr. Wiegand.)
- E. J. DURAND**, Instr. in Bot.
A.B., Cornell, '93, and Sc.D., '95.
- *Embryology, Mycology, etc. iii, 32.
- *Taxonomy of the Pteridophytes and Bryophytes. iii, 32.
- P. A. FISH**, Asst. Prof. Comp. Physiol. and Pharmacol.
B.S., Cornell, '90, and D.Sc., '94; D.V.S., Natl. Vet. Col., '96; Instr. in Physiol., Vert. Zool., and Neurol., Cornell, '90-5; Asst. in Division of Animal Pathol., Washington, D. C., '95-6.
- *Comp. Physiol. Lects. and demonstrations. ii, 32.
- *Physiol. Lab. ii, 11, Ja.-Mar.
- *Pharmacology. Lects. and recitations. i, 32.
- *Lab. in Pharmacy. ii, 12, O.-D.
- GRANT S. HOPKINS**, Asst. Prof. of Vet. Anat. and Anatom. Methods.
B.S., Cornell, '89; and Sc.D., '93.
- *Anat. Methods and Gross Anat. Lab. iii, 12, O.-D.
- *Anat. Lab. (adv). iii, 11, Ja.-Mar.

- *Human Anat. Research and lab. iv, 32.
- *Vet. Anat. Lects. and lab. iv, 32.
- B. B. STROUD**, Instr. in Phys., Vert. Zool. and Neurol.
B.S., Cornell, '91, and Sc.D., '94.
- *Hist. of Nervous System. iii, 9, Ap.-Jun.
- *Vert. Zool. ii, 11, Ja.-Mar. (With Dr. Wilder.)
- *Neurology. ii, 9, Ap.-Jun. (With Dr. Wilder.)
- B. F. KINGSBURY**, Instr. in Microscopic Methods, Histol., and Embryol.
A.B., Buchtel, '93; M.S., Cornell, '94, and Ph.D., '95.
- Cytology. ii, 9, Ap.-Jun.

HARVARD.

22 Graduate Students, 1897-8.

- Museum Comp. Zoölogy**, founded by Louis Agassiz, 1859 (Alexander Agassiz, curator), has collections, under the charge of museum assts., and available for scientific study. Lib. of 25,000 vols. and 12,500 pamphlets on Zoölogy and Palæontology. Humboldt fund maintains one or more students at Museum, Newport Marine Lab. or Wood's Holl, U. S. F. C. Sta. Investigations are published in the Bull. Mus. Comp. Zool. Botanic garden of 7 acres offers facilities for investiga. Herbarium of over 200,000 species, including types of Synoptical Flora of N. A. Bot. lib. at Herb. of over 9,000 vols. Bot. Mus., including Blaschka glass models. Extensive cryptogamic herb. Zool. and Bot. Clubs. Schol. of \$250, open to students in Zool., also a table of Naples Zool. Stat.
- GEORGE L. GOODALE**, Prof. of Nat. Hist., and Dir. of the Botanic Garden.
A.B., Amherst, '60, M.D., Harv., '63; A.M. (hon.), Amherst, '66, and Bowd., '69; M.D., Bowd., '63; LL.D., Amherst, '90, and Bowd., '94.
- *Morphol., Histol., and Physiol. of Flowering Plants. ii, 30.
- *[System. and Economic Botany. iii, 30.]
Phanerogams. Exper. Veg. Physiol. System. Botany. Economic and Med. Botany. Research. — ?
- WILLIAM G. FARLOW**, Prof. of Cryptogamic Botany.
A.B., Harv., '66, A.M., '69, and M.D., '70.

Structure and Devel. of Cryptogams. Research. —? (With Dr. Richards.)

ROLAND THAXTER, Asst. Prof. of Cryptogamic Botany.

A.B., Harv., '82, A.M., '88, and Ph.D., '88.

*Cryptogamic Botany. ii, and lab. work, 15, F.-Jun.

Structure and Devel. of Cryptogams. Research. —?

EDWARD L. MARK, Prof. of Anatomy.

A.B., Mich., '71; Ph.D., Leipzig, '76; Instr. Math., Mich., '71-2; Instr. Zool., Harv., '77-'83; Asst. Prof. '83-6.

Anat. and Devel. of Verts. and invertebrates. Research. —?

*Microscop. Anatomy. iii, and lab. work, 15, O.-Ja. (With Dr. Castle.)

*Embryology of Vertebrates. iii, and lab. work, 15, F.-Jun. (With Dr. Castle.)

Anatomy and Devel. of Vertebrates and Invertebrates. Research. —?

CHARLES B. DAVENPORT, Instr. in Zoölogy.

S.B., Brooklyn Polytech. and Col. Inst., '86; A.B., Harv., '89; Ph.D., same, '92.

*[Exper. Morphol. Ontogenesis. ii, 30.]

*Exper. Morphol. Phylogenesis. ii, and lab. work, 30.

GEORGE H. PARKER, Instr. in Zoölogy.

S.B., Harv., '87; Sc.D., same, '91; Biologist Mass., State Bd. of Health, '89-'90; Instr. Zool., Harv., '88-'91.

*[Nervous System and its Terminal Organs. Sense Organs. iii, 15, O.-Ja.]

*Nervous System and its Terminal Organs. Central Nervous Organs and Terminal Organs of Efferent Nerves. iii, 15, O.-Ja.

ROBERT T. JACKSON, Instr. in Palæontology [see 17].

*Fossil Invertebrates. ii, and lab. work, 30.

JOHNS HOPKINS.

18 Graduate Students, 1897-8.

Marine Lab. of Zool. is open part of the year. Students have access to Capt. J. D. Smith's private herbar. of 78,000 sheets, esp. flora U. S.

and Am. tropics; also to the Schimper Coll. Europ. phanerogams and Fitzgerald Coll. mosses. Journal Club meets weekly. Adam T. Bruce, Fel. in Zool.

W. K. BROOKS, Prof. of Zool. and Dir. Chesapeake Zool. Lab.

A.B., Williams, '70; Ph.D., Harvard, '75; LL.D., Williams, '93.

Princ. of Zool. iii, 12, Ja.-Ap.

Adv. lects. in Zool. by instructors and fellows. i, 12, Ja.-Ap.

Marine Zool. v, 12, Ap.-Jul.

Zool. Seminary. i, 20, O.-Ap.

Readings in Zool. i, 30.

Adv. lab. work in Zool. —?

W. H. HOWELL, Prof. of Physiology.

A.B., Johns Hopkins, '81; Fellow, '82-4; Ph.D., '84; Lect. and Prof. Physiol. and Histol., Mich., '89-'92; M.D., Mich., '90; Assoc. Prof. Physiol., Harv., '92-3.

Animal Physiol. Lects. iv, lab. v-xii, 30.

Physiol. Seminary. i, 30.

Physiol. Journal Club. i, 30.

Adv. lab. work in Physiol. —?

— Lecturer in Botany.

Comp. Morphol. of Plants. Lects. ii, lab. vi-xii, 30.

Botanical Seminary. i, 20.

Adv. lab. work in Botany. —?

LELAND STANFORD, JR.

19 Graduate Students, 1897-8.

Hopkins' Seaside Lab. in Zoölogy, Physiology and Botany, located at Pacific Grove, on the Bay of Monterey, is a branch of the Biol. work.

OLIVER P. JENKINS, Prof. of Physiol. and Histol.

A.B., Moor's Hill Col., '69, and A.M., '72; M.S., Indiana, '86, and Ph.D., '89; Prof. of Natural Science, Moore's Hill, '76-'82; Prof. Biology, De Pauw, '86-'91.

*Special Courses in Physiol. (adv.) ii-v, 32. (With Mr. Greene.)

Adv. Physiol. and Histol. Research. —? (With Prof. McFarland and Mr. Greene.)

*Journal Club. I, 32.

Sem. in Physiol. and Histol. ii, 32. (With Mr. Greene and Prof. McFarland.)

Leland Stanford—*continued*

FRANK M. MCFARLAND, Assoc. Prof. of Histology.

Ph.B., DePauw, '89; A.M., Stanford, '93; Asst. in Biology, De Pauw, '88-9; Prof. of Biology, Olivet, '89-92; Ph.D., Würzburg, '96.

*Histology of the Nervous System and Sense Organs. ii, 17, Ja.-My.

*Special Courses in Histology. ii-v, 32.

*Cellular Biology. ii, 17, Ja. My.

J. H. COMSTOCK, Prof. of Entomology.

B.S., Cornell, '74; Instr. in Entomology, '73-7; Asst. Prof. '77-82; U. S. Entomologist, at Washington, '79-81; Prof. of Entomology and Gen. Invert. Zoology, Cornell, since '82.

*Morphol. and Classifi. of Coccidæ. iii, Ja.-Mar.

Special Investigations in Insect Morphol. or Physiol. —?

Adv. lab. course. ii-v, 32. (With Snow and Snodgrass.)

DOUGLAS H. CAMPBELL, Prof. of Bot.

Ph.M., Michigan, '82, and Ph.D., '86; Prof. of Botany, Indiana, '88-91.

*Algæ. iii, 15, S.-D.

*Archegoniata. v, 17, Ja.-My.

Adv. work in Comp. Morphology and Embryology. —?

WILLIAM R. DUDLEY, Prof. of Bot.

B.S., Cornell, '74, and M.S., '76; Instr. in Botany, Cornell, '72-6; Asst. Prof., '76-92.

*Geographical Distribution. ii, 17, Ja.-Adv. work. Special investigation on Biology of Spermatophytes and Fungi. —?

CHARLES H. GILBERT, Prof. of Zool.

B.S., Butler, '79; M.S., Indiana, '82, and Ph.D., '83; Asst. in Nat. Sci. and Mod. Lang., Indiana, '80-4; Prof. of Nat. Hist. Cincinnati, '84-8; Prof. of Zoology, Indiana, '88-91; Asst. to U. S. Fish Commission, '80-91.

Adv. Research. —?

*Adv. Ichthyology. ii-v, 32.

Course in Zool. Reading. ii, 32. (With Price.)

GEORGE C. PRICE, Assoc. Prof. of Zool.

B.S., De Pauw, '90; Ph.D., Stanford, '97.

*Adv. Embryology. ii, 32.

MICHIGAN.

9 Graduate Students, 1897-8.

VOLNEY M. SPALDING, Prof. of Bot.

A.B., Michigan, '73; Ph.D., Leipzig, '94.

*Morphol. of Fungi. iii-v, 17, O.-F.

*Morphol. of Phanerogams. iii-v, 17, F.-Jun.

Original work in Morphology. —?

F. C. NEWCOMBE, Asst. Prof. of Bot.

B.S., Michigan, '90; Instr. in Botany, same, '90-2; Ph.D., Leipzig, '93.

*Cell Morphol. and Physiol. iii-v, 17, O.-F.

*Vegetable Physiol. iii-v, 17, F.-Jun. Original work in Physiol. —?

FANNY E. LANGDON, Asst. in Botany.

B.S., Michigan, '96.

Morphol. of Phanerogams. iii, 17, F.-Jun.

JACOB E. REIGHARD, Prof. of Zool.

Ph.B., Mich., '82; Instr. in Zool., same, '86-7; Act. Asst. Prof. Zool., '87-8; Asst. Prof. '89; Dir. Scientific Work, Mich. Fish Com., since '89.

*Comp. Embryology and Anatomy of Vertebrates. v, 34.

Current Lit. of Zoology. i, 34.

Original work in Zoology. —?

Field Club Work. iii, 17, F.-Jun. (With Prof. Worcester and Dr. Lillie.)

Mr. ———, Instr. in Zool.

Study of Special Groups. —?

FRANK R. LILLIE, Instr. in Invert. Zool.

A.B., Toronto, '91; Reader in Embryology, Chicago, '93-4, and Ph.D., '94; Instr. Marine Biol. Station, Wood's Holl, '94-5.

*Invert. Morphol. iii, 34.

J. B. JOHNSON, Instr. in Zool.

Mammalian Anat. v, 34.

MINNESOTA.

Animal Biol., 6; Botany, 8—Graduate Students, 1897-8.

Animal Biol., fully equipped laboratories. Botany; Herbarium, 200,000 specimens; Library, 3,000 vols., 6,500 pam. Pub. quarterly "Minn. Bot. Studies."

HENRY F. NACHTRIEB, Prof. of Animal Biol.

B.S., Minn., '82; Fel. Biol., and Asst. Biol. Lab., Johns Hopkins, '82-4; State Zoölogist of Geol. and Nat. Hist. Survey.

Research in Vert. and Invert. Embryol. and Morphol. — ? 36.

Indiv. Lab. Work. Directed. — ? 36.
Philosophical Zoölogy. Lects. — ? 36.

Journal Club. i, 36.

CHARLES P. SIGERFOOS, Asst. Prof. of Animal Biol.

B.S., Ohio Univ., '89; Asst. in Zoöl., '89-'91; Instr. in Biol., Univ. of Vir., '91-2; Asst. Zoöl. and Embryol., Johns Hopkins Univ., '94-7; Ph.D., Johns Hopkins Univ., '97.

*Comp. Anatomy of Invert. viii, 36.

*Comp. Anatomy of Vert. viii, 36.

*Animal Phys. and Histol. iv, 24.

OSCAR W. OESTLUND, Instr. in Animal Biol.

B.A., Augustana Col., '79; M.A., '87.

Entomology. iv, 36.

CONWAY MACMILLAN, Prof. of Bot.

A.B., Univ. of Neb., '85; Asst. Geol. Univ. of Neb., '85-6; A.M., '86; Entomologist U. S. Agric. Exper. Station, Lincoln, Neb., '86-7; Instr. in Bot., Minn., '87; Asst. Prof. of Bot., '90; State Bot., Geol. and Nat. Hist. Survey.

Plant Ecology. iv, 36.

Cellular Morphol. and Dynamics. iv, 36.

Morphol. and Taxonomy. iv, 36.

D. T. MACDOUGAL, Asst. Prof. of Bot.

B.S., Purdue, '90; M.S., '91; A.M., De Pauw, '93; Instr. in Bot., Purdue, '90-2; Agent Bot. Div. U. S. Dept. of Agric., '91-2; Ph.D., Purdue, '97.

Phys. of the Cell. iv, 36.

Physiology. iv, 36.

A. A. HELLER, Instr. in Bot.

A.B., Franklin and Marshall, '92; Field Agent Div. of Bot. U. S. Dept. of Agric., '92.

Taxonomy and Spermatophyta. iv, 36.

JOSEPHINE E. TILDEN, Instr. in Cryptogamic Bot.

B.S., Minn., '92; M.S., '93.

Algology. iv, 36.

FREDERICK W. SARDESON, Instr. in Palæ. Bot.

B.L., Minn., '91; M.S., '92; Ph.D., Freiburg, '95.

Palæ. Bot. iv, 36.

MISSOURI.

4 Graduate Students, 1897-8.

HOWARD AYERS, Prof. of Biol. and Dir. of Biol. Museum.

B.S., Harv., '83; Ph.D., Freiburg, i. Br., '85; Instr. in Zoöl., Mich. Univ., '85-6, and Harv. Univ. and Radcliffe Col., '86-8; Director Allis Lake Lab., '89-'94; Prof. of Biol. Univ. of Mo., '94-; Instr. in Marine Biol. Lab., '90-6.

Neurology. iii, 36.

Cryptology. iii, 36.

Investigations in Vertebrate Morphol. iii, 36.

*Vertebrate Morphol. iii, 18.

*Adv. Histol. iii, 18.

*Vertebrate Embryol. iii, 18.

NORTHWESTERN.

5 Graduate Students, 1897-8.

1 Fellowship \$400.

WILLIAM A. LOCY, Prof. of Zoöl.

B.S., Mich., '81, and M.S., '84; Fel., Harv., '84-5; Ph.D., Chicago, '94.

*Topics of Investigation in Animal Morphol. (intro. to orig. research). v, 36, and x, 36.

Research. Independent Probs. in Animal Morphol. and Neurol. x, 36, and xv, 36.

CHARLES B. ATWELL, Prof. of Bot.

Ph.B., Syracuse, '79, and Ph.M., '81; Prof. in Biol. Northwestern, '91-4.

*Special Probs. in Bot. iii, 36.

*Botanical Club. i, 36.

PENNSYLVANIA.

13 Graduate Students, 1897-8.

Haydn, Leidy, Ryder and Cope Libs. of Geol., Palæontol., Zoöl. and Bot., 5,000 vols. Biol. Hall has spec. Labs. for Grad. work. Wistar Inst. of Anat. and Biol. with its colls. is entirely devoted to Grad. work. Bot. Gardens contain about 3,000 native and exotic plants. Complete coll. veg. products used in U. S. Pharmacopœia. Cope Osteolog. coll. 1 Fel. \$500 + tui. 1 Schol. in Biol. and Chem. \$100 + tui.

Pennsylvania — continued

HORACE JAYNE, Prof. of Zool. and Dir.
Wistar Inst. of Anat. and Biol.

A.B., Univ. of Pa., '79; M.D., same, '82; Asst.
Instr. in Biol., '83; Prof. Vert. Morphol., '84;
Dean of Col., '89-'94; Ph.D., Franklin and
Marshall, '93.

Human Anat.

Mammal. Osteol.

JOHN M. MACFARLANE, Prof. of Bot.

B.S., Edinburgh, '79; Instr. in Bot., Royal
Vet. Col., '81; Univ. Asst. Lects., (Edin.), and
Cur. Herbar., Royal Bot. Garden, '83; Asst.
Prof., Edinburgh, '89.

Plant Irritability. Lect., lab., sem.
v, 15, O.-F.

Plant Nutrition. Lect., lab., sem.
v, 15, F.-My.

Plant Cytology. Lect., lab., sem. v, 30.

JOHN W. HARSHBERGER, Instr. in Bot.,
Gen. Biol., and Zool.

B.S., Univ. of Pa., '92, and Ph.D., '93; Instr.
in Bot., same, '90-'7.

Comp. Study of Fungi. Lect., lab.,
sem. v, 30.

HOBART C. PORTER, Instr. in Bot.

A.B., Princeton, '81; B.L., Univ. of Pa., '84;
Ph.D., Rostock, '94.

Comp. Study of Pteridophyta. Lect.,
lab., Sem. v, 30.

EDWIN G. CONKLIN, Prof. of Comp. Em-
bryol.

B.S., Ohio Wesleyan, '85; A.B., '86, and A.M.,
'89; Asst. Biol. Lab., Johns Hopkins, '89; Fel.
Biol., same, '90, and Ph.D., '91; Prof. Biol.,
Ohio Wesleyan, '91-4; Prof. Zool., Northwest-
ern Univ., '94-6.

Comp. Embryol. Invert. Lect., lab.
vii, 30.

[Comp. Embryol. Vert. Lect., lab.
vii, 30.]

Zool. Sem. i, 30.

PROFS. MACFARLANE and CONKLIN.

Evolution of Plants and Animals. i, 30.

PROF. CONKLIN and DR. MONTGOMERY.

Comp. Histol. Cell. Studies. vii, 30.

**PROF. CONKLIN, DR. MOORE, and DR.
CALVERT.**

Invert. Zool. iii, 30.

Prof. of Zool. and
Comp. Anat.

Comp. Anat. of Vert. Lects. iii, 30.

Biol. Club. Fort., 30.

PRINCETON.

4 Graduate Students, 1897-8.

1 Fel. \$400. Besides enumerated courses, a special
research course in Biol., varying to meet needs
of students, is offered to Graduates.

GEORGE MACLOSIE, Prof. of Biol.

A.M., Queen's College, Belfast, '58; LL.D.,
London, '71; Sc.D., Queen's College, '82.

*Comp. Osteol. ii, 18, S.-Ja.

*Physiol. ii, 18, S.-Ja.

WILLIAM LIBBEY [see 17].

*Normal Histol. ii, 18, F.-My.

*Pract. Histol. ii, 18, F.-My.

W. B. SCOTT [see 17].

*Palæontol. iv, 18, F.-My.

C. F. MCCLURE, Asst. Prof. of Biol.

A.B., Princeton, '88, and A.M., '92.

*Embryol. ii, 18, F.-My.

*Mammalian Anat. ii, 18, S.-Ja.

RADCLIFFE.

2 Graduate Students, 1897-8.

G. T. MOORE.

*Cryptogamic Bot. iii, and lab. 30.

G. L. GOODALE and E. W. OLIVE.

*Histol. and Physiol. iii, and lab. vi,
30.

G. L. GOODALE.

Systematic and Econ. Bot. Lab. ix,
and occasional lects. 30. (With an
Asst.)

Adv. Course in Econ. Bot. i, 30.
(With an Asst.)

*Comp. Anat. of Verts. iii, and lab.
30. (With an Asst.)

E. L. MARK.

*Microscop. Anat. iii, and lab. 15, O.-
Ja. (With an Asst.)

*Embryol. of Verts. iii, and lab. 15,
F.-Jun. (With an Asst.)

Research (adv). — ?

G. H. PARKER.

- *[Nervous System and Its Terminal Organs. Sense Organs. iii, 15, O.-Ja.]
- *Nervous System and Its Terminal Organs. Central Nervous Organs and Terminal Organs of Efferent Nerves. iii, 15, O.-Ja.

C. B. DAVENPORT.

- *[Exper. Morphol. Ontogenesis. iii, and lab. 30.]
- *Exper. Morphol. Phylogenesis. iii, and lab. 30.

VANDERBILT.**PAUL M. JONES, Instr. in Biology.**

- B.S., Vanderbilt, '89; M.S., '91, and Sc.D. '92.
- *Mammalian Anatomy. iii, 16.
- *Histology and Embryology. iii, 16.
- Comp. Vert. Anat. iii, 32.
- Morph. of Flatworms and Annelids. iii, 16.
- Morph. of Crustacea and Mollusca. iii, 16.

WELLESLEY.

1 Graduate Student, 1897-8.

SUSAN M. HALLOWELL, Prof. of Botany.

- A.M., Colby, '75.
- *Vegetable Histol. and Physiol. iii, 35.
- *Vegetable Embryol. and other special topics. iii, 35.

CLARA E. CUMMINGS, Assoc. Prof. of Cryptogamic Botany.

- *Cryptogamic Botany. iii, 35.
- *Cryptogamic Botany (adv). iii, 35.

GRACE E. COOLEY, Assoc. Prof. of Botany.

- A.M., Brown, '93; Ph.D., Zürich, '94.
- *Medical Botany. iii, 35.

MARY A. WILLCOX, Prof. of Zoöl.

- *Philosophical Zoöl. iii, 35.

AGNES CLAYPOLE, Instr. in Zoöl.

- Ph.B., Buchtel, '92; M.S., Cornell, '94.
- *Anatomy of the Cat. iii, 17, S.-Ja.
- *Embryology of the Chick. iii, 17, F.-Jun.

EDITH CLAYPOLE, Instr. in Physiol.

Ph.B., Buchtel, '92; M.S., Cornell, '93; Ph.D., Chicago, '96.

- *Animal Histology and Histol. Methods. iii, 35.

WESTERN RESERVE.

2 Graduate Students, 1897-8.

F. H. HERRICK, Prof. of Biology.

A.B., Dartmouth, '81; Ph.D., Johns Hopkins, '88; Instr. in Biology, Adelbert, '88-'91; Prof. same, '91.

- *Vertebrate Embryol. v, 17, F.-Jun.
- *Botany, or Vegetable Morphol. v, 17, F.-Jun.
- *Mammalian Anatomy. v, 16, S.-Ja.
- *Animal Morphol. i, and lab. iv, 16, S.-Ja.
- Animal Morphology. v, 16, S.-Ja.
- Experimental Biology. i, 16, S.-Ja.
- *Elements of Vertebrate Histology. iii, v, 16 S.-Ja.

WISCONSIN.

9 Graduate Students, 1897-8.

EDWARD A. BIRGE, Prof. of Zoölogy.

A.B., Williams, '73; Instr. in Nat. Hist., Wisconsin, '76-9; Ph.D., Harvard, '78; Sc.D. (hon.) West. Univ. of Penn., '97.

- Adv. Invert. Zoöl. and special work in lake life. x, 36.

WILLIAM S. MARSHALL, Asst. Prof. of Biol.

A.B., Swarthmore, '88; Ph.D., Leipzig, '92.

- Invert. Embryology. x, 18, F.-Jun.
- Thesis Work in Invert. Zoöl. — ?
- (With Prof. Birge.)

WILLIAM S. MILLER, Asst. Prof. of Vertebrate Anatomy.

M.D., Yale, '79; Instr. Wis., '92.

- Adv. Histology. x, 18, F.-Jun.

HARRY L. RUSSELL, Prof. of Bacteriology.

B.S., Wisconsin, '78; Fel. in Biol., same, '88-'90; Ph.D., Johns Hopkins, '92; Fel. in Biol., Chicago, '92-3; Consult. Bact. to Wis. State Board Health since '93.

- Adv. Bacteriology. x, 18, S.-F.

Wisconsin — continued

Dairy Bacteriology. x, 18, S.-F., or F.-Jun.

Agricult. Bacteriology. x, 18, S.-F.

WILLIAM D. FROST, Instr. in Bacteriol.

B.S., Minn., '93, and M.S., '94; Scholar in Bot., Minn., '93-4; Asst. in Bact. Lab. Minn. State Board of Health, '94-5.

Adv. Bacteriol. x, 18, F.-Jun. (With Prof. Russell.)

*Biol. of Water Supplies. x, 18, S.-F.

CHARLES R. BARNES, Prof. of Botany.

A.B., Hanover, '77, and Ph.D., '86; Prof. of Bot. and Geol., Purdue, '80-7.

Vegetable Organogeny and Embryol. x, 18, F.-Jun.

Vegetable Physiol. x, 36.

Bryology. x, or xv, 36.

RODNEY H. TRUE, Asst. Prof. of Pharmacognosy.

Fel. in Bot., Wis., '90-2, and M.S., '92; Ph.D., Leipzig, '95.

Plant Ecology.

*Physiol. of Plant Constituents. i, 18, F.-Jun.

LELLEN S. CHENEY, Asst. Prof. of Pharm. Bot.

B.S., Wis., '91; M.S., Wis., '96; Fel. in Bot., Wis., '91-2; Instruction in Bot., '92-6.

Vegetable Hist. v, 36.

YALE.

14 Graduate Students, 1897-8.

Peabody Museum.

A. E. VERRILL, Prof. of Zool.

B.S., Harv., '62; A.M., Yale, '67; Prof. Comp. Anat. and Entomol., Wis.

Zoölogy. Lab., recit., and lects. — ? 32.

S. I. SMITH, Prof. of Comp. Anat.

Ph.B., Yale, '67, and A.M., '87.

S. I. SMITH and W. R. COE.

*Anat. and Histol. (el). Lab. iv, 12, O.-D.

*Comp. Anat. and Gen. Biol. Lab. vi, 20, Ja.-Jun.

Comp. Anat. and Gen. Biol. (adv). Lab. 5 days per wk.

W. R. COE, Instr. in Biol.

Ph.B., Yale, '92, and Ph.D., '95.

Cytol. and Gen. Embryol. iv, 12, O.-D.

R. H. CHITTENDEN, Prof. of Physiol. Chem.

Ph.B., Yale, '75, and Ph.D., '80; Ins. Phys. Chem., same, '76-'82.

*Physiol. i, 32.

*Physiol. Chem. iv, Ja.-Jun.

L. B. MENDEL, Asst. Prof. of Physiol. Chem.

A.B., Yale, '91, and Ph.D., '93.

R. H. CHITTENDEN and L. B. MENDEL.

Physiol. Chem. (adv). Lab. xx, lects. and recit., iii-iv, 32.

Exper. Physiol. ii, 32.

Exper. Toxicol. ii, 12, Easter.-Jun.

Physiol. Seminary. ii, 32.

A. W. EVANS, Instr. in Bot.

Ph.B., Yale '90, and M.D., '92.

*Bot. v, F.-Jun.

Gen. Morphology of Plants. ii, 32.

O. C. MÄRSH, Prof. of Palæontol.

A.B., Yale, '60; Ph.D., Heidelberg, '86; LL.D., Harv., '86.

Vert. Palæontol. ii, Ja.-Jun.

C. E. BENCHER, Asst. Prof. of Palæontol.

B.S., Mich., '78; Ph.D., Yale, '89.

Invert. Palæontol. Lab. iii, daily.

J. W. SEAVER, Assoc. Dir. of Gym.

A.B., Yale, '80, and M.D., '85.

*Physiology. i, 32.

Physiol. and Gym. ii, 32.

W. G. ANDERSON, Assoc. Dir. of Gym.

M.D., West. Res., '83.

Princs. and Practice of Gym. Hist., Means, Pedagogy. ii, 32.

17. GEOLOGY AND GEOGRAPHY.

[Including Palæontology (in part), Lithology, and Mineralogy. See also 15 and 16.]

BARNARD.

1 Graduate Student, 1897-8.

[See Columbia Courses marked B.]

BROWN.

0 Graduate Students, 1897-8.

ALPHEUS S. PACKARD, Prof. of Zoöl. and Geol.

Ph.D., Bowdoin; Libr. and Custodian, Boston Soc. Nat. Hist., '65; Lect., Mass. Agricult. Col. '69-'77; Maine Agricult. Col., '71; Bowdoin, '73-6.

*Geology. iii, 23, S.-Mar.

FREDERICK P. GORHAM [see 16].

*Economic Geology. ii, 10, Ap.-Jun.

BRYN MAWR.

— Graduate Students, 1897-8.

FLORENCE BASCOM, Lecturer in Geol.

A.B., L.B., Wisconsin, '82; B.Sc., '84 and A.M., '87; Ph.D., Johns Hopkins, '93; Asst. in Geol. and Instr. in Petrography, Ohio State Univ., '93-5.

Lects. on Mineralogy. ii, 30.

Lects. on Palæontology. i, 30.

*Lects. on Geology. iii, 30.

Lab. and Field Work. v, 30.

CALIFORNIA.

4 Graduate Students, 1897-8.

Special opportunity offered for actual work in the field. 1 Fel. in Mineral., \$500.

JOSEPH LE CONTE, Prof. of Geol. and Natural History.

A.M., Georgia; M.D., New York; B.S., Harvard; LL.D., Georgia, Princeton.

Lects. on Evolution of Earth Forms and the Organic Kingdom. ii, 30.

ANDREW C. LAWSON, Assoc. Prof. of Geol. and Mineral.

A.M., Toronto; Ph.D., Johns Hopkins. Research in Inorganic Geol.

JOHN C. MERRIAM, Instr. in Zoal-næ-tology.

Ph.D., München.

Research in Palæontology.

WILLIAM A. SETCHELL, Prof. of Botany.

A.B., Yale; Ph.D., Harvard.

Cryptogamic Botany (adv).

Botanical Seminary.

*Phycology and Mycology. ii, 32.

*[Bryology and Pteridology.]

WILLIS L. JEPSON, Instr. in Botany.

Ph.B., Univ. of Cal.

Phænogamic Botany (adv).

*Morphol. of the Compositæ. i, 16. Au.-D.

*[Taxonomy and Phylogeny of the Phænerogams.]

W. J. V. OSTERHOUDT.

A.B., and A.M., Brown.

Histology and Cytology (adv).

*Vegetable Cytology.

CHICAGO.

34 Graduate Students, 1897-8; and 26 in Summer Quarter, '97.

Geological Club meets weekly. Dept. located in Walker Museum. Has large collections, systematically arranged, in Geol. and Palæontol. 4 Fels.

THOMAS C. CHAMBERLIN, Head Prof. of Geology.

A.B., Beloit, '66, and A.M., '69; Ph.D., Michigan and Wisconsin, '82; Pres., Wisconsin, '87-'92; LL.D., Michigan, Beloit, and Columbian, '87.

Seminar. Glacial Geol. ii, 6, F.-Mar.

Special Geol. v-x, 36. (With Prof. Salisbury.)

*Local Field Geol. v-x, 48. (With Prof. Salisbury.)

Professional Geol. ix, 12, Jul.-S.

Independent Field Work. ix, 12, Jul.-S.

General Geol. Seminar. i, 36, O.-Jun.

Chicago—continued

- *History of the Earth. v, 12, Ap.-Jun.
- Principles and Theories of Geol. v, 18, O.-F.
- Field Geology (adv). Third Course. x, 12, Jul.-S.

ROLLIN D. SALISBURY, Prof. of Geographic Geol.

Ph.B., Beloit, '81, and A.M., '84; Prof. Geology, same, '84-'91; Prof. Gen. and Geographic Geol., Wisconsin, '91-2.

- *Geographic Geol. v-x, 12, O.-D.
- *Lab. work in Geog. Geol. v, 6, N.-D.
- *Structural Geol. and Continental Evolution. v-x, 12, Ja.-Mar.
- *General Geol. v-x, 12, Ja.-Mar., and v-x, 6, Jul.-Au.
- Dynamic Geog. (adv). v-x, 12, Ja.-Mar.
- Field Geology (adv). Second Course. Yellowstone Nat. Park. x, 12, Jul.-S. (With Prof. Iddings.)
- Special Geol. v-x, 36, O.-Jun. (With Head Prof. Chamberlin).

JOSEPH P. IDDINGS, Prof. of Petrology.

Ph.B., Sheffield Scientific School, '77; Asst. Geologist, U. S. Geog. Survey, '80-8; Geologist, '88-'92; Reinstated, '95.

- *Intro. to Mineral. Phys. and Geom. Crystallog. iv, 12, O.-D.
- *Elem. Petrology. v-x, 12, Ap.-Jun.
- Petrology. v-x, 36, O.-Jun.
- Geomet. and Physical Crystallog. v, 18, O.-F.
- *Descrip. Mineral. v, 12, Ja.-Mar.
- Petrology. v, 12, Ap.-Jun.
- Petrography (adv). v-x, 36, O.-Jun.
- Field Petrology.

CHARLES R. VAN HISE, Non-Res. Prof. of Pre-Cambrian Geol.

B. Met. E., Wisconsin, '79, and S. M., '82; Ph.D., same, '92; Prof. Geol., same, '88; Geologist U. S. Geol. Survey.

Structural Geology. v, and lab. v, 6, Ja.-F.

RICHARD A. F. PENROSE, Jr., Prof. of Economic Geol.

A.B., Harv., '84, and Ph.D., '86; U. S. Geol. Survey, '84-6; Geol. Survey, Texas, '88-9; Geol. Survey, Arkansas, '89-92.

Economic Geol. v, 12, Ja.-Mar.

Chem. of Ore Deposits. v, 12, Ja.-Mar.

WILLIAM H. HOLMES, Prof. of Archaeologic and Graphic Geol.

Geologist, U. S. Geol. Survey, '80-9; Archaeologist, U. S. Bureau Ethnology, '89-'93; Curator U. S. National Museum.

- *Anthropic Geol. iv, 12, Ap.-Jun.
- *Graphic Geol. iv, 12, Ap.-Jun.

STUART WELLER, Asst. in Palæont. Geol.

B.S., Cornell, '94; Asst. Missouri Geol. Survey, '90; Asst. U. S. Geol. Survey, '91; Asst. Palæontol., Cornell, '92-3; Asst. in Geol., same, '93-4; Asst. in Palæontol, Yale, '94-5.

- *Geol. Life Devel. Av, 12, p.-Jun.
- Palæontologic Geol. Devonian Life. v-x, 12, Ja.-Mar; Silurian Life. v-x, 12, Ap.-Jun.
- *Intro. to Palæontol. Geol. v-x, 12, O.-D.
- Palæozoic Life. v, 12, Ja.-Mar.; Mesozoic Life, Ap.-Jun.
- Special Palæontol. Geol. v-x, 36, O.-Jun.

OLIVER C. FARRINGTON, Professional Lecturer in Determinative Mineralogy.

B.S., Maine State Col., '81; M.S., same, '88; Asst. in Mineral. and Biol., Yale, '89-'91; Ph.D., Yale, '91; Asst., Dept. of Minerals, U. S. Nat. Museum, '93-4; Curator of Geol. Field Columbian Museum, '94.

- *Determinative Mineral. Lab. x, 6, My.-Jun.

WALLACE WALTER ATWOOD, Asst. in Physiography.

- *Field Geol. v-x, 6, Au.-S.

COLUMBIA.

18 Graduate Students, 1897-8.

Geological museum of about 100,000 specimens. Study may be prosecuted in Am. Mus. of Nat. Hist. Mineralogical coll. of 26,000 labelled spec.

JAMES F. KEMP, Prof. of Geology.

A.B., Amherst, '81; E.M., Columbia, '84; Asst. Prof., Cornell, '86-'91; Adj. Prof., Columbia, '91-2.

Economic Geol. iii, 30.

B)[Petrology. Lects. ii, lab. iv, 30.]

B)Comp. Geol. Lects. ii, lab. iv, 30.
(With Mr. Van Ingen.)
Geological Examination and Surveys.
i, 30.

•CHARLES A. HOLLIĆK, Tutor in Geol.
Ph.B., Columbia, '79; Fellow in Geol., same,
'90; Asst., '92; Tutor, '93; Librarian, N. Y.
Acad. of Sci., '93; Ph.D., Columbia, '97.

B)Palæobotony. Lects. i, lab. iv, 2 yrs.

GILBERT VAN INGEN, Curator of Geol.
Coll.

B)Invertebrate Palæontol. Lects. ii, lab.
iv, 30.

ALEXIS A. JULIEN, Instr. in Geol. and
Curator.
Ph.D.

Geol. of Building Stones. iv, 16, O.-F.
Metamorphism. ii, 14, F.-Jun.

ALFRED J. MOSES, Adj. Prof. of Miner-
alogy.

E.M., Columbia, '82, and Ph.D., '90.

B)Crystallography. ii, 16, O.-F.
Descriptive and Determinative Mineral.
Lects. ii, lab. iii, 14, F.-Jun.; also
O.-F. (With Dr. Luquer.)
Minerals of Building Stones. Lects.
ii, lab. ii, 30. (With Mr. Whitlock.)
Math. Crystallography. — ?

B)Mineral. (adv). — ?
Systematic Mineral. xx, 2 yrs. (With
Dr. Luquer.)

LEA McI. LUQUER, Tutor in Mineralogy.
E.M., Columbia, '87, and Ph.D., '94.

B)Optical Mineral. Lab. xii, 1 yr., or vi,
2 yrs.

HERBERT P. WHITLOCK, Asst. in Min-
eral.

C.E., Columbia, '89.

Minerals of Building Stones. (With
Prof. Moses.)

CORNELL.

6 Graduate Students, 1897-8.

Museum of Geol., Palæontol., and Mineral. com-
prises Jewett coll. of N. Y. State fossils, New-
comb coll. of recent shells, Silliman coll. of
minerals, study colls. of minerals and petro-
graphical specimens. 1 Fel. \$500, and 1 Grad.
Schol. \$300, assigned to Depts. of Geol. and
Bot.

RALPH S. TARR, Prof. of Dynamic Geol.
and Phys. Geog.

B.S., Harv., '91; Asst. in Geol., same, '90-1;
Asst. in Geol., Texas Geol. Surv., '89-'90, and
U. S. Geol. Surv., '87-9, '91-2.

*Phys. Geog. iii, 32.

*Sem. in Phys. Geog. and Geol. ii, 32.

*Geol. Lects. and field. iii, 32.

*Gen. Geol., esp. Dynamic. iii, 32.

*Economic Geol. Lects. iii, 9, Ap.-Jun.

*Glacial Geol. Lects. and excursions,
iii, 12, Ap.-Jun.

GILBERT D. HARRIS, Asst. Prof. of
Palæontol.

Ph.B., Cornell, '86; Asst. Palæontol., U. S.
Geol. Surv., '88-'92; Tertiary Palæontol., Texas
Geol. Surv., '92-4.

*Hist. Palæontol. Lects. ii, 12, O.-D.

*Palæontol. Illustration. i, 9, Ap.-Jun.

*Research in Tertiary Invert. Palæontol.
ii, 32.

*Conchology (el). Lects. and lab. iii,
20, J.-Jun.

ADAM C. GILL, Asst. Prof. of Mineral.
and Petrog.

A.B., Amherst, '84; Ph.D., Munich, '93; Prof.
of Math., Park Col., '84-6.

*Mineral. vi, 32.

Mineral and Petrog. Research. iii, 32.
Sem. in Mineral. and Crystallog. i, 11,
Ja.-Mar.

*Petrog. Lects. and lab. iii, 20, Ja.-Jun.
*Phys. Crystallog. Lects. and lab. iii,
12, O.-D.

*Lithol. Lects. ii, 9, Ap.-Jun.

HARVARD.

11 Graduate Students, 1897-8.

[Courses marked R are open to Radcliffe Graduate
Students.]

Lab. of Geography, Geol., Mineral. and Palæon-
tol. Mineralogical Museum. Geol. Confer-
ence meets weekly. Geol. and Geograph. ex-
cursions under var. instr. Orig. investigation
for adv. students pursued through the year.

NATHANIEL S. SHALER, Prof. of Geol.,
and Dean of the Lawrence Scientific
School.

S.B., Harv., '62, and Sc.D., '75.

*Gen. Palæontol. ii-iii, 30. (With Dr.
Jackson.)

Harvard — continued

- *Hist. Geol. i, and lab. work, 30.
(With Dr. Jackson.)
- *Econom. Geol. Non-metalliferous products and Water Supply. ii-iii, 15, O.-Ja. (With Asst. Prof. Smyth.)
- Geol. Invest. Field and Lab. Research. —? (With other instructors.)
- Adv. Geol. Field Work. (With other instructors.)
- Adv. Palæontol. Research. —?

WILLIAM M. DAVIS, Prof. of Phys. Geog.
S.B., Harv., '69, and M.E., '71; Asst. Argentine Nat. Observ., Cordova, '70-3.

- *[Physiography of Europe. iii, 15, F.-Jun.]

R) Physiography (adv). Research. i-ii, 30.

JOHN E. WOLFF, Prof. of Petrog. and Mineral., and Curator of Mineralogical Museum.

A.B., Harv., '79, and Ph.D., '89.

- *Phys. Crystallog. —? F.-Jun. (With Dr. Palache.)

- *Petrog. ii-iii, and lab. work, 30.
(With Dr. Eakle.)

R) Mineral. and Petrog. Research.

HENRY L. SMYTH, Asst. Prof. of Mining.

A.B., Harv., '83, and C.E., '85; Topographer, U. S. Geol. Survey.

- *Pre-Cambrian Geol. of N. Am. —? O.-Ja.

- *Mining Geol. iii, 30.

ROBERT T. JACKSON, Instr. in Palæontol.

S.B., Harv. '84, and Sc.D. '89.

Gen. Palæontol. i, and lab. work, iv, 30.

ROBERT DEC. WARD, Instr. in Meteorol.

A.B., Harv., '89, and A.M., '93.

- *Climatol. iii, 15, O.-Ja.

- *Special Climatol. iii, 15, F.-Jun.

JAY B. WOODWORTH, Instr. in Geol.

S.B., Harv., '94.

- *Glacial Geol. ii, 15, O.-Ja.

- *Gen. Crit. Geol. ii-iii, 30. (With Mr. Woodman.)

THOMAS A. JAGGAR, Jr., Instr. in Geol.

A.B., Harv., '93, and A.M., '94.

Structural and Dynamical Geol. of U. S. ii, 15, O.-Ja.

Experimental and Dynamical Geol. ii, and lab. work, 15, F.-Jun.

Adv. Geol. Field Work. i, 30. (With Profs. Shaler, Davis, Wolff, and Smyth.)

J. M. BOUTWELL, Asst. in Physiog.

A.B., Harv., '97.

- *Physiog. of the U. S. iii, 15, F.-Jun.

JOHNS HOPKINS.

28 Graduate Students, 1897-8.

WILLIAM B. CLARK, Prof. of Organ. Geol.

A.B., Amherst, '84; Ph.D., Munich, '87; State Geol., Md.; Dir. Md. State Weather Service; Geol. U. S. Geol. Surv.

Palæontology. Lects. iii, and lab. v, 30, O.-My.

Hist. Geol. Lects. iii, and lab. v, 30, O.-My.

Gen. Geol. Lects. iv, and lab. 15, Mar.-My.

HARRY F. REID, Assoc. Prof. of Geol. Physics.

A.B., Johns Hopkins, '80; Ph.D., '85; Prof. Math. Case Sch. App. Science, '86-8; Prof. of Physics, Dynamical Geol. and Physiography, '88-'93; Asst. Geol. Md. Geol. Surv.

Geol. Physics. Lects. ii, and lab. ii, 15, Feb.-My.

Experimental Geol. Lects. ii, O.-F., and lab. ii, 30, O.-My.

EDWARD D. MATHEWS, Assoc. in Mineral. and Petrog.

A.B., Colby, '91; Ph.D., Johns Hopkins, '94; Asst. U. S. Geol. Surv., '91-5; Asst. State Geol., Md.

Mineralogy. Lects. iv, and lab. v, 30, O.-My.

Petrography. Lects. iii, and lab. v, 30, O.-My.

[Metamorphism. Lects. ii, and lab. v, 30, O.-My.]

OLIVER L. FASSIG, Instr. in Climatology.

B.S., Ohio State Univ., '82; Yale, '85-7; Berlin, '96-7; Observer U. S. Weather Bureau.

Climatology. Lects. ii, O.-Ja.

GEORGE B. SHATTUCK, Instr. in Geol.
B.S., Amherst, '92; Ph.D., Johns Hopkins, '97;
Asst. Geol. Md. Geol. Survey.

*Gen. Geol. Lects. iv, and lab. v, 20
O.-Ap.

*Field Geol. About fifteen excursions,
spring and fall. Assists Dr. Clark
in Palæontol. lab.

GROVE K. GILBERT, Lecturer.

A.B., Rochester, '62; Geologist Ohio Survey,
'69-'71; Wheeler Survey, '71-4; Powell Survey,
'74-9; U. S. Geol. Survey, '79—

Physiographic Geology. Lects. ii, 12,
Ja.-Mar.

BAILEY WILLIS, Lecturer.

M.E., Columbia, '78, and C.E., '79; 10th Cen-
sus Special Agent, '79-81; Geologist North.
Transcon. Survey, '88-4; U. S. Geol. Survey,
'84—

Stratigraphic and Structural Geol.
Lects. ii, 12, Mar.-Jun.

———, Lecturer.

Principles of Geol. (George Hunting-
don Williams Memorial Lectures.)

HERBERT G. GEER, Assoc. in Mechan.
Eng.

Mechanical, Map, and Section Draw-
ing. i, 30.

LELAND STANFORD, JR.

4 Graduate Students, 1897-8.

CASPER BRANNER, Prof. of Geology.

B.S., Cornell, '82; Ph.D., Indiana, '85; Asst.
Geol., Imperial Geol. Survey of Brazil, '75-8;
Prof. of Geol., Indiana, '85-91; State Geol. of
Ark., '87-'92.

*Dynamic and Structural Geol. iii, 15,
S.-D.

*Economic Geol. ii, 17, Ja.-My.

*Topographic Geol. ii-v, 32.

*Special Investigations. ii-v, 32.

JAMES P. SMITH, Prof. of Mineral. and
Palæontology.

A.M., Vanderbilt, '86; Ph.D., Göttingen, '92;
Asst. Geol., Arkansas Geol. Survey, '87-'90.

*Mineralogy. ii, 32.

*Adv. Mineral. and Petrog. iv, 32.

*Palæontology. *a* Systematic; *b* Hist.
Geol. iv, 32.

*Palæontology. Orig. Investigations.
ii-iv, 32.

WALDEMAR LINDGREN, Assoc. Prof. of
Mining and Metallurgy.

M.E., Freiberg, '83; Asst. Geol. North. Trans-
con. Surv., '83; Asst. Geol., Geol. Survey, '85;
Geologist, same, '95.

*Mining. i, 17, Ja.-My.

*Metallurgy. ii, 17, Ja.-My.

MICHIGAN.

2 Graduate Students, 1897-8.

ISRAEL C. RUSSELL, Prof. of Geol., L.L.D.

N. Y. U., '72, and M.S., same, '75; Asst. U. S.
Transit of Venus Exp., '74-5; Asst. Prof. Geol.,
Columbia, '75-7; Asst. Geol., U. S. Surv. 100th
Mer., '78; Asst. Geol. and Geol., U. S. Geol.
Surv., '80-'92.

*Phys. and Glacial Geol. ii, 17, F.-Jun.

*Palæontol. Invest. ii-iii, 17, F.-Jun.

*Physical Geog. iii, 17, O.-F.

WM. H. PETTEE, Prof. of Mineral., Econ.
Geol., and Mining Engineering.

A.B., Harvard, '61, and A.M., '64.

Adv. work in Mineralogy. — ? 34.

MINNESOTA.

5 Graduate Students, 1897-8.

Geol. Museum embraces collections of the Geol.
survey of the State, and study of colls. in Pe-
tology and Palæontology, esp. in anc. eruptives
and lower Palæozoic faunas of the northwestern
States. The Geological Club meets weekly.

CHRISTOPHER W. HALL, Prof. of Geol.
and Mineral.

A.B., Middlebury, '71, and A.M., '74.

Granitic Rocks of Minn. i, 36.

Pre-Cambrian Eruptives of Northeast-
ern Minn. i, 36.

Local Glacial Phenomena. i, 36.

*Economic Geol. iv, 13; N.-Mar.

*Special Problems. iv, 13, N.-Mar.-Jun.

CHARLES P. BERKEY, Instr. in Mineral.

B.S., Minn., '92; M.S., '93; Ph.D., '97.

Original Problems. Particular groups
of Minerals studied. i, 36.

*General Mineral. iv, 25, S.-Mar.

*Phys. and Chem. Mineral. Optical
Characters and Stauroscopic Deter-
minations. iv, 13.

Minnesota — continued

Mineral-Chem. Methods and Applica.
iv, 13.

*Math. Crystallography. ii, 13, Mar.-Jun.

FREDERICK W. SARDESON, Instr. in
Palæontology.

B.L., Minn., '91; M.S., '92; Ph.D., Freiburg,
'95.

*Palæontology. iv, 13, Mar.-Jun.

Lower Palæozoic Formations of South-
eastern Minn. i, 36.

MISSOURI.

o Graduate Students, 1897-8.

C. F. MARBUT, Asst. Prof. of Geol. and
Mineralogy.

B.S., University of Mo., '89; A.M., Harvard,
'94.

Petrography. iii, 36.

Geomorphology. iii, 36.

NEW YORK.

o Graduate Students, 1897-8.

JOHN J. STEVENSON, Prof. of Geology.

Ph.D., N. Y. U., '67; Asst. Ohio Geol. Survey,
'71-4; U. S. Geol. Survey, '73-4, '78-'80; Asst.
2d Geol. Surv., Penn., '75-8, '81-2; LL.D.,
Col. N. J., '93.

*Economic Geology. iii, 30.

Principles of Geology. ii, 28.

Invert. Palæontology vi, 28.

PENNSYLVANIA.

14 Graduate Students, 1897-8.

AMOS P. BROWN, Asst. Prof. of Mineral-
ogy and Geology.

E.M., Univ. of Pa., '87; Ph.D., '92; Prof. of
Mineralogy and Geol., Auxiliary Dept. Medi-
cine, '92.

Historical Geology. Lects. and lab.,
i-ii, 30.

Lithology and Petrography. Lects.
and lab. i-ii, 30.

Physical Geology. Lects. i, 15, O.-F.

Chemical Geology. Lects. i, 15, F.-My.

Palæontology. Lab. ii, 30.

Math. and Phys. Crystallog. Lects.
i, 15, O.-F.

Math. and Phys. Crystallog. Lab. ii, 30.

Systematic Mineralogy Lects. i, 30.

Chem. and Synthetic Mineralogy.

Lects. i, 15, F.-My.

Systematic Mineralogy. Lab. ii, 30.

Deter. by Phys. and Pyrogenetic Prop-
erties. Lab. ii, 30.

Synthetic Mineralogy. Lab. ii, 30.

Field Excursions. i, 30.

PRINCETON.

2 Graduate Students, 1897-8.

WILLIAM LIBBEY, Prof. of Phys. Geog.
and Histol., and Direc. Mus. Geol. and
Archæol.

A.B., Princeton, '77, and Sc.D., '79.

Relations of Phys. Geog. to Hist. of
Mankind. i, 18, F.-My.

W. B. SCOTT, Prof. of Geol.

A.B., Princeton, '77; Ph.D., Heidelberg, '80.

*[Physical Geol. ii, 36.]

*Hist Geol. ii, 36.

RADCLIFFE.

o Graduate Students, 1897-8.

[See Harvard Courses marked R.]

W. M. DAVIS.

*[Physiog. of U. S. iii, F.-Jun.]

*[Physiog. of Europe. iii, F.-Jun.]

J. B. WOODWORTH and MR. WOODMAN.

*Gen. Critical Geol. iii, 30.

J. E. WOODMAN.

*Glacial Geol. iii, 15, F.-Jun.

DR. JAGGAR.

*Structural and Dynam. Geol. of the U.

S. ii, 15, F.-Jun. Conferences.
lib. work.

R. DE C. WARD.

*Climatol. iii, 15, O.-Ja.

C. PALACHE.

*Crystallog. Lab. and lects. iii, 15,
O.-Ja.

J. E. WOLFF and C. PALACHE.

*Phys. Crystallog., mainly Optical Min-
eral., and Its Applications. iii, 15,
F.-Jun.

J. E. WOLFF.

*Petrog. Lects. and lab. iii, 30.

VANDERBILT.

- Graduate Students, 1897-8.

JAMES M. SAFFORD, Prof. of Geol.

A.B., Ohio, Univ., '42; M.D., Ph.D., Yale, '44; State Geologist of Tenn., '54-'97.

Econ. Geology. iii, 32.

Mineralogy. iii, 16.

Palæontology. iii, 16.

Special Applied Geol. iii, 32.

WESTERN RESERVE.

1 Graduate Student, 1897-8.

H. P. CUSHING, Prof. of Geol.

Ph.B., Cornell, '82, and M.S., '85; Instr. in Geology and Chemistry, W. R. U., '92; Assoc. Prof. Geol., '93-5; Prof., '95.

Descriptive Mineral. and Crystallography. v, 17, F.-Jun.

*Determinative Mineral. iii, 16, S.-Ja. Petrography. —?

Stratigraphical and Dynamical Geol. —?

WISCONSIN.

8 Graduate Students, 1897-8.

CHARLES R. VAN HISE, Prof. of Geology.

B. Met. E., Wis., '79, and M.S., '82; Instr. in Metallurgy, same, '79-'83; Asst. Prof., '82-4; Prof., '84-8; Prof. Archæan and Applied Geology, '88-'92; Prof. Geol., '92; Ph.D., Wis., '92; Geologist, U. S. Geol. Survey.

Physical and Pre-Gambrian Geol. ii, 36.

[Princ. of Metamorphism and Metamorphic Rocks. ii, 36.]

Detailed Mapping of Pre-Cambrian Districts in Wis. ii-iii, 30.

J. MORGAN CLEMENTS, Asst. Prof. of Geol.

Ph.D., Leipzig, '90; Asst. Geologist, U. S. Geol. Survey.

*Invertebrate Palæontology. iii, 36.

WILLIAM H. HOBBS, Asst. Prof. of Mineral and Petrol.

Ph.D., Johns Hopkins, '88; Asst. Geol., U. S. Geol. Survey.

*Petrology. v, 36.

Adv. Mineralogy. iii-v, 36.

Petrology of Pre-Cambrian Districts in Wis. ii-iii, 36.

YALE.

14 Graduate Students, 1897-8.

H. S. WILLIAMS, Prof. of Geol.

Ph.B., Yale, '68, and Ph.D., '71; Prof. Geol. and Palæontol., Cornell; U. S. Geol. Survey.

Geological Biology. —?

*Philos. of Life and Organism. ii, 32.

*Geology. ii, 32.

W. H. BREWER, Prof. of Agriculture.

Ph.B., Yale, '52; Ph.D., Washington and Jeff., '82; Prof. Nat. Sci., Wash. Col.

Physical Geog. iii, 16, O.-F.

E. S. DANA, Prof. of Physics.

A.B., Yale, '70, A.M., '74; and Ph.D., '76.

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